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The achievement of Robbins II

Degrees of expert knowledge

Perhaps the sharpest paradox of the Robbins period is that what started as an enlightened experiment in liberal pedagogy, an attempt to free undergraduate education in particular from the sclerosis of creeping academic specialization and redefine liberal education in modern post war terms, ended by stimulating the development of a pervasive culture of research and the reinforcement of A. H. Halsey's "dominant dominion", which were so inimical to that cause. If the misdirection of expansion, into social sciences rather than science and especially technology, is the first complaint against Robbins, this is the second. For this it is difficult to blame the committee. Rather it was a result of how the universities interpreted, or misinterpreted the message of Robbins or simply went their own way. The second theme of the post-war development of the universities encouraged by both UGC and Robbins plainly was to encourage more liberal forms of higher education. In practice these were largely interpreted in terms of broader curriculum, the Robbins committee had no doubt that this was the right approach.

So it is hardly surprising that the Robbins report recommended that a higher proportion of students should receive a broader education in their first degrees. Indeed the committee emphasized that this was central to the philosophy of its report - "We regard such a change as a necessary condition for any large expansion of universities". This broader undergraduate education would take two forms, more degrees that combined two or more subjects and more pass degrees "at a less arduous level".

Perhaps one of the weaknesses of Robbins was that at this stage the argument for general undergraduate education faltered. The committee did not explain the suitable content and structure of such education in sufficient detail to allow effective policies to be developed. It insisted that it was not arguing for breadth as such, regardless of the suitability of the combinations of subjects, and also that students should not be made guinea pigs on "experiments with totally new subjects without textbooks or a commonly accepted core of methods of thought", a considerable caveat. The committee was equally cautious in its detailed remarks about pass degrees. It expected the number of such courses and of students on them to remain small and that the majority of students would still embark on honours degree courses despite the blight of specialization. The pass degree route was consigned to "the slower and less able student".

Both the commitment of Robbins to the principle of general undergraduate education and the committee's ambivalence about their detailed implementation echoed the contradictory opinions on this question within the universities. First, the commitment. This had three discordant elements. The first was a perhaps reactionary sentiment, a longing for the integrative disciplines that had played such a creative role in the elite pedagogy of the liberal university. The second in contrast was almost futuristic, a prediction that in the future the turnover of theoretical knowledge would be so great that those with an overspecialized higher education would be saddled with obsolescent information and skills. So the acquisition of adaptable and necessarily general intellectual skills had to have a higher priority than the acquisition of detailed information and specialized skills.

This third view the sciences recognized. Non-thesis undergraduate education of the universities would, in time, be the lot of students who although not necessarily "slower and less able" might lack the sharply focused intellectual commitment of students in a smaller and more

selective system. All three elements came together to make up this sustained commitment to more general undergraduate education. The ambivalence of Robbins about the details is equally interesting. For the enthusiasm of the committee, and of the UGC, for general courses was tempered in three ways. First, both contemplated a substantial expansion of postgraduate courses, although they attached a low priority to extending the length of first degree courses. The need for this was clear to Robbins. The expansion of knowledge had made it impossible for a student to master a subject within the limits of a first degree. Attempts to do so had led to serious overloading which had not only made first degrees too specialized but failed to achieve this objective. The worst of both worlds in fact.

The second qualification was that considerations of manpower planning were never entirely banished even from the Robbins report. The committee paid considerable attention to the split between arts and sciences, and half-recommended, half-predicted that the proportion of students studying science and technology subjects (excluding medicine) in universities should rise from 45 per cent to 56 per cent in 1980/81, and that within this increase there should be a relative shift from science to technology. From the late 1960s the UGC became increasingly absorbed with this kind of macro-manpower planning in general and the arts: science split in particular.

Of course, this concern did not directly contradict the enthusiasm for more general undergraduate education. General science courses could be conceived as well as general non-science courses, but in practice because of the greater fragmentation of scientific knowledge were much more difficult to implement. So it is probably fair to regard the concern with the arts: science split, to the advantage of the latter, as evidence of the enthusiasm for more general degrees.

The third qualification of this enthusiasm was really also the third theme of post war university development. It was knowledge itself, or in the words of Robbins "the advancement of learning". The modern university has placed the codification of theoretical knowledge at the centre of its enterprise. Even the Robbins committee, in many ways a body very much attached to the older values of the liberal university, was prepared to concede this although rather grudgingly. The advancement of learning was the third of its four objectives for higher education. "The search for truth is an essential function of institutions of higher education and the process of education is itself most vital when it partakes of the nature of discovery".

By accepting that this search for truth, which in the inevitable form of research would be almost wholly determined by the theoretical preoccupations of specialized disciplines of knowledge, was an essential function of the university and that the teaching of students had to be conducted in close association with research, the Robbins committee made it unlikely that its scheme by general degrees would be developed on any scale.

Although uneasy, the members of the committee did not break with this orthodoxy. In a significant sense the student who was most likely to benefit from a broad undergraduate education was notified in the high-fliers who agreed to "a world of intellectual responsibility and intellectual discovery". It was the binary policy that

was through this increasingly complex division of intellectual labour that the modern university had become an efficient knowledge machine. Both the members of the UGC and of the Robbins committee were aware of two persuasive facts. The first was that this division of labour had been much more forcefully followed through into a parallel differentiation or stratification of higher education in rival nations than in Britain.

In the USSR, very much in the mind of the Robbins committee because of the recent successes of Soviet science, research and the training of the specialist institutions. In the United States the much greater diversity of the system had allowed the so-called research universities to concentrate on science and scholarship and relatively to degrade undergraduate teaching. In contrast to both Britain's more homogeneous universities seemed a more primitive knowledge machine.

The second was that the greatly increased public expenditure on universities was regarded by successive governments as an investment in science, technology, and other useful knowledge. They were the advance factories of ideas that would invent the future, or at any rate prevent our falling too far behind the Americans and Russians (or, a decade later, the French and Germans).

The second objective of university development, the broadening of undergraduate education, has not been met. It certainly has not been met by the universities. What progress has been made, and much of that has been precarious and conditional, has been made in the polytechnics and other non-university colleges. In universities the overwhelming majority of undergraduates continues to be enrolled on degree courses.

At first sight this conservatism is puzzling. During a period when Britain developed an at least semi-mass system of university education the hegemony of the honours degrees has been virtually without serious challenge. Indeed it can be argued that it has been reinforced by the development of degree courses in the polytechnics and colleges under auspices of the Council for National Academic Awards. Part of the explanation is simply banal. There was in the 1950s and 1960s a large unsatisfied demand for higher education places, as the subsequent successful expansion so clearly established. As the universities were largely in the business of offering specialized degree courses it was almost inevitable that much of this expansion would flow into that channel.

However, a major reason must be the values of the academic profession and the traditions of the universities of which are reflected in the practice of honours degrees. One does not need to be a conservative to accept that honours degrees occupy a particularly sensitive and influential place in British universities. This cannot be explained simply in terms of institutional inertia or fear of change.

They also embody important and for many eloquent values about the intentions of undergraduate teaching, which are related to both the commitment to excellence, a duty which the Robbins committee took particularly seriously precisely because it was recommending such a radical expansion of the system and the pedagogical traditions of the liberal university, and its strong commitment to "high" public culture. Although there is no room here to discuss these underlying values in any detail, four general points may perhaps be made.

The first is that because British universities have continued to enrol only the brightest students, who if they are immediate school leavers, will have passed through an

intensive and rigorous education in the upper secondary school, university teachers have high expectations of their students. Second, there is a strong assumption that conceptual skills are best acquired through a sustained study of a specialized subject.

Third, the hierarchy of the academic profession continues to be largely determined by prowess in research and there is still no serious division of labour between teachers and researchers. One result is that teachers however devoted they may be to good undergraduate teaching, always have to pay considerable attention to the developing theoretical preoccupations of their disciplines.

This bias may be intensified by the fact that there are powerful research institutions that can command attention of individual universities directly through grants and indirectly through the influence of discipline-based networks, while the process of teaching undergraduates has no powerful external focus. The existence of the CNAA modifies this pattern, the non-university half of higher education but the universities remain free of all external validation or accreditation.

Fourth, British universities are exceptionally autonomous. Neither the state nor the market has much influence over what goes on inside individual universities. So the hegemony of the honours degree may simply be a reflection of the "dominant dominion".

The third broad theme of post-war university development, the growth of a more persistent research culture, is to be measured against two distinct criteria, the statistical and the normative. The results of the first tend to support the view that research has become much more important within universities. In 1959/60 universities had a research income of £1,951,000 (£1,096,000 from the Government), which represented 5.5 per cent of their total income. In 1978/79 it had increased to 15.3 per cent, £230 out of £1,500. These figures, of course, only cover earmarked research expenditure.

It has been suggested, most recently in the Merrison report, that since the middle-1970s this trend has been reversed and that expenditure on research has been squeezed as universities have had to readjust to reduced income. It is certainly true that the number of university teachers has increased more slowly than the number of students so leading to less general staff: student ratios and so, potentially at any rate, to greater concentration on teaching.

Yet this has been offset by two factors. The first has been the growth in the number of academic staff in universities solely concerned with research, the majority on short-term contracts. The second is that, although the universities' share of the science budget may have declined from its mid-1970s peak, the science budget itself has continued to grow much faster than general university income. So the true picture may be not that research is on the defensive in universities but that it is being conducted under different conditions that make much greater use of contract labour rather than mainstream university teachers, probably less significant than the much broader issue raised by the development of a stronger research culture, and the over-spilling of the traditional limits of the academic system into the formation of a new intellectual class. This issue will be discussed next week.

Peter Scott

The Times Higher Education Supplement

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Funding shake-up approved

by John O'Leary

New methods under consideration for distributing money from the advanced further education pool would switch funds from the smaller colleges and provide a boost for some hard-pressed polytechnics.

The National Advisory Body has approved proposals from one of its working groups to make next year's allocation more sophisticated, building in extra weightings to compensate for high-cost courses. The group, which meets again next week, is examining the feasibility of giving credit for particular groups of subjects and for degree and postgraduate courses.

Preliminary work by the Department of Education and Science has shown that the new system could result in massive changes for some specialist colleges and would make a significant difference to certain polytechnics.

Six possible new methods of allocation, taking account of student numbers, levels of work and subject variations, and combinations of all three factors were examined by the DES. The adjustments all produced only marginal changes for the polytechnics as a whole, but some would experience considerable budget fluctuations.

Oxford Polytechnic, the least generously funded of the group at present, would gain between 4.5 and 5.5 per cent from the introduction of new subject weightings, whether or not combined with an extra allowance for higher level courses. But Middlesex Polytechnic would lose up to 3 per cent.

The biggest weighting would be given to computer courses, with music, drama, the visual arts and science next. Engineering, medicine, pharmacy and ancillary health courses would also benefit, with humanities at the bottom of the scale and business management, accountancy, law, languages and literature little better off.

The most spectacular gains would be made by small, specialist institutions such as the College of Nautical Studies, which would receive a budget increase of 26 per cent from subject weightings alone and might improve its position by as much as 36 per cent if other allowances were made as well. But those with little degree work and specializing in the "wrong" subjects would lose almost as much.

Teams seek better relations

by Jon Turney

Science Correspondent
University teams hoping to attract funding from the Government's new £200m programme of advanced computer research will need an industrial "patron" to support their applications. A progress report from the Alvey directorate, named after the chairman of the working party which recommended the programme, says that contrast proposals should normally involve at least two industrial partners.

Applicants for money will also have to spell out which parts of their work are industrial, eligible for 50 per cent funding, and which parts academic, and fully paid for by the directorate. The report says that if research is so speculative or long term that there is no prospect of direct industrial participation, in an academic programme, an "uncle" from industry will be required

UGC discusses going public

by Peter Scott

The University Grants Committee may in future publish "Green Papers" on policy issues like student demand and manpower planning.

Retiring chairman Sir Edward Perkes is particularly keen that the UGC should publish discussion documents to inform the university community about current issues. In some cases these might list options for future policy and so provide the first ever opportunity for the universities to participate publicly in UGC planning.

The committee already has policy papers written for private consumption which could be rewritten as discussion documents. The obstacle to this new initiative is the UGC's chronic shortage of staff. It is estimated that up to three new officials would be needed, but the committee has lost a third of its staff in the last five years.

The internal papers would have to be elaborated because they are written for a small, private, and expert audience. Some of the language would have to be changed and the issues set in a broader context before they could be published as discussion documents.

Given the necessary staff, the UGC would expect to publish three or four "Green Papers" a year.

This idea will be among plans for the reform of the working of the UGC that will be discussed by the committee at its annual residential weekend next month. Sir Edward's last major occasion as chairman before moving to Leeds as vice-chancellor on October 1.

Also on the agenda will be the increasingly complex issue of student numbers. In recent months the UGC has come under mounting pressure, from officials if not ministers in the Department of Education and Science, to modify its tough line on limiting student numbers.

This pressure will be increased next month when the National Advisory Body publishes its plans for 1983/84 which will lead to new restrictions on intakes to polytechnics and colleges.

At its September retreat the UGC will consider the implications of the NAB plan for opportunity rates in higher education generally, and discuss particular requests from individual universities to vary their targets.

The most likely outcome is that the UGC will

reaffirm its former stand but allow few universities to recruit a limited number of extra students, mainly in science and engineering.

The universities have lost a potential windfall of more than £10m as a result of the Chancellor of the Exchequer's emergency cuts package in July. It became clear this week. If these sudden cuts had not been imposed, their grants could have been updated because the UGC made an unnecessarily pessimistic allowance for rate increases in the original calculations.

So although their grants will not be actually reduced, there has been a significant loss of potential income.

The rest of the £23.5m saving demanded of the universities this year has been achieved by raising restructuring funds. £10m has been cut out of the £30m allocation but the UGC has already told the DES that the full amount would not have been claimed by the universities in time because of the pace at which staff were being shed. Any unspent sum would have been clawed back by the Treasury in any case so the universities have suffered no effective loss.

Train teachers to combat racism, says CRE

by Patricia Santinelli

The Commission for Racial Equality has asked teacher training institutions to investigate the racial attitudes of their staff and devise anti-racist courses.

A letter from the commission's new anti-racist working group says it is concerned about the failure of teacher training institutions to include multicultural and anti-racist material in courses.

"In Britain today we live in a profoundly racist society and therefore cannot take a neutral stance towards this in our teacher training institutions. It is time for those concerned about racism to consider strategies both for practitioners to operate and for establishing this as a priority and mandatory part of teacher education," the letter says.

The group was asked for support from not only teacher education institutions but also groups engaged in working against racism, in particular black people themselves. It says it wants to get away from the concept of introducing multicultural education in the curriculum and to take a positive anti-racist stance where all institutions will examine every aspect of their training programmes.

"This will obviously include the

curriculum, but more importantly will involve the study of the racial attitudes of all staff, methods of recruiting both staff and students, devising anti-racist courses including the history and facts of racism and how they should be taught in schools," it says.

The new group intends to operate regionally with active members meeting regularly to work out how anti-racist attitudes can be translated into action. It gives a list of those who have already either attended or supported the group.

Initial reactions to the letter show that it is not being received in the spirit intended. Professor Bill Middlebrook, head of Trent Polytechnic's school of education and the chairman designate of the Polytechnic Council for the Education of Teachers said it smacked of a witch hunt.

"The whole ethos of the letter is wrong," he said. "It represents an extreme statement of the situation and it is conceptually naive to say we are a racist society."

Professor Maurice Craft, dean of the school of education at Nottingham University and the chairman of the CRE official advisory group on teacher education described the new group as wasteful and said it duplicated the role of the CRE's official advisory group.

Plans drawn up for training scheme shortfall

Manpower Services Commission officials and ministers are to discuss contingency plans for meeting a possible shortfall in the number of eligible people going on to the Youth Training Scheme this September.

Last month Mr David Young, chairman of the MSC said that his major worry was a surplus of places because it had become clear that more young people were getting jobs or were planning to stay in education than had been anticipated. This was later disputed by the Institute of Careers Officers.

MSC plans involve relaxing the eligibility rules and drawing up a priority order of previously excluded young people. Under current regulations only 16-year-olds have a guaranteed place.

Mr Geoffrey Holland, director of the MSC who does not believe there will be a shortfall, said there were three

groups who could fill the places: ● unemployed 17-year-olds; ● disabled and handicapped youngsters over 16 and a few over 18; ● people who entered the Youth Opportunities Programme but because of the changeover to YTS received only short training and are now unemployed. Careers officers and the education service have argued that they have been unfairly treated.

Mr Holland said it was very important for the credibility of the scheme that there should be enough youngsters to fill the places.

The MSC is also preparing proposals for next year's scheme which it intends to put to commissioners and ministers in September. It has to reconcile three key aspects - no additional Government funds are available for YTS; the expansion of the scheme to all 17-year-olds; and the quality of the scheme. It is

thought that commissioners would insist on quality rather than expansion if given the choice.

A major expansion of Mode A schemes - those run by employers - balanced by a more moderate expansion of Mode B schemes - those run by colleges and voluntary agencies - is being considered.

But Mr Holland stressed that no expansion of Mode B would be necessary, not only because in some parts of the country it was not possible to run Mode A schemes, but because Mode B schemes were of very good design and quality and their sponsors were particularly willing to take on the most disadvantaged young people.

To ensure the quality of YTS, the commission is planning shortly to advertise the post of head of quality assurance.

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Sussex is body in question

by Jon Turney
Science Correspondent

Dr Jonathan Miller is set to pursue his interrupted academic career at Sussex University this autumn. Last year he decided to return to full-time research after years as a director and writer and has been offered a three-year Leverhulme research fellowship in the university's school of cognitive sciences.

The fellowship is worth nearly £90,000 and will follow a summer spell as visiting professor of medicine at McMaster University in Canada. Sussex University said this week that he has not formally accepted the award, but an announcement was expected in the next two or three weeks.

Dr Miller's most recent television appearances were in a series of interviews with leading psychologists, and he has an abiding interest in the workings of the brain since qualifying as a doctor in the late 1950s. The school of cognitive sciences at Sussex is known for an interdisciplinary approach to psychology, philosophy and computer science, especially through the work of Professors Margaret Boden and Christopher Longuet-Higgins.

Dr Miller has held two previous academic appointments but, characteristically, neither was in an area related to the neuropsychological studies he now wants to develop. He held a research fellowship in the history of medicine at University College London from 1970-73 and he has also been a visiting professor of drama at Westfield College, London.

Despite his reputation as a director in the theatre and opera, he maintains that research is "much more worthwhile". He has often said that no hospital would allow him to return so the Sussex appointment, if confirmed, would be a happy compromise.

Leftover research needs cash

by Olga Wojtas
Scottish Correspondent

Aberdeen University is to seek a grant from the Medical Research Council to allow research to continue after an MRC-funded unit is transferred from Aberdeen to Glasgow.

It is thought that the department of obstetrics and gynaecology will ask for around £100,000 to continue work pioneered by the medical sociology unit set up 20 years ago under the directorship of Professor Raymond Illsley.

Professor Illsley retired in October and the unit, the only one of its type funded by the MRC, will move to Glasgow some time in the coming year with Dr Sally Macintyre, at present a member of the Aberdeen unit, as its

new director.

Professor Illsley said: "We have always worked extremely closely with the department of obstetrics, and they will lose a major resource. We have done an enormous amount of work on the study of childbirth, and problems related to infant deaths, abortion, stillbirths and contraception."

The unit had also collaborated with the department of community medicine, and had looked at the way in which social factors affected the health and development of children and adults, as well as carrying out various studies on the elderly.

Professor R. D. Weir said his department of community medicine would presumably seek links with Aberdeen's department of psychology, sociology and social work. The loss of

the unit was "unfortunate", he said, but added: "It's one's honest, one can see why there's a need for it in Glasgow as opposed to Aberdeen which only has a population base of 400,000."

Glasgow has a much larger and more diverse population, said Dr Macintyre, with more social and medical extremes. "Aberdeen is fairly homogeneous, fairly healthy, with fairly low unemployment. In Glasgow we hope to look at the effect of the social and physical environment on people's health in two or possibly more communities."

The Aberdeen unit currently has a staff of around 25, some of whom will remain in the university. Dr Macintyre said the Glasgow unit will likely to begin with around ten staff from Aberdeen, with several new recruits.



"Settles Paris", by Haydn Cettam of St Martin's School of Art, went on show yesterday at the Mall Galleries, London, as one of the finalists in the Hunting Group's new student art competition. The winner, Katy Shepherd, of Sheffield Polytechnic, won £500 and a one-woman show at the galleries to coincide with next year's competition. The finalists were chosen from 67 entries by final year degree students at 23 universities, colleges and polytechnics. All will participate in the Hunting Group's open competition, which carries two £5,000 prizes.

Cambridge updates on robots

The University of Cambridge is to enter the lucrative field of career updating by offering industrialists a course on robot applications.

The intensive two-day course this autumn will signal the first fully-fledged collaboration between a university department and the extra-mural department leading to a refresher course of this sort.

The extra-mural department at Cambridge has approached other departments to try to encourage continuing education programmes which it sees as a chance to tap reserves of expertise. In the past, individuals or groups of individuals within departments have provided consultancy or other services to industry from their own initiative.

The university's extra-mural department provides in-service training courses for magistrates and Home Office staff and for the armed services on international relations and computing. But these courses have not been in cooperation with any university departments although they have drawn upon university staff.

The unique aspect of the collaboration with the department of engineering on the robot application course is that it is a structured course in which the department is officially involved.

Both the extra-mural department and the engineering faculty had been working their way separately towards an in-service course of this sort for the production engineering trips at Cambridge a few years ago has brought in new staff.

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Hunt for chain of learning

Strathclyde regional councillors are seeking the missing link in the mystery disappearance of a century-old civic guildhall. Cast for the Glasgow School Board in 1883, and thought to be worth several thousand pounds, it was worn by co-owners of the former Glasgow Corporation education committee.

When Scottish local government was reorganised in 1975, the chain should have passed to the new Strathclyde Regional Council. But nobody in the regional council or Glasgow District Council appears to know where it is.

A search has been launched by Dr Malcolm Green, the present chairman of Strathclyde's education committee, who has now asked the police to investigate. Dr Green had been reading a book on 100 years of education in the city of Glasgow when his eye was caught by a picture of a former education governor, representative in the chain.

Dr Green denies he is anxious to find the chain simply to wear it himself. Strathclyde's ruling Labour group has not overheard on gaudy trappings.

Dr Green said he thought however there was a case for wearing the chain when receiving foreign delegations or going abroad.

The amendment has been tabled to a motion from the National Society of Metalworkers expressing concern at the way employers are promoting the use of temporary labour. It demands pressure from the general council to change employment legislation to outlaw waiver clauses and to remove the qualifying periods.

Nathie has also tabled an amendment seeking to change the Manpower Services Commission's policy on adult education and training.

The association was responding to a report prepared by Mr Geoffrey Cockburn on behalf of the Department of Education and Science and the Foreign and Commonwealth Office. It recommended that such consorts should be able to disburse grants provided by Youth Exchange Unit working alongside the Central Bureau for Educational Visits.

The APT argues that if the regional authorities draw up their own rules for awards they will be complicit in a system which it is proposed to simplify. If they do not have their own rules they will be duplicating the efforts of the YEU.

The process would be expensive and undesirable and would enable local authorities to disburse grants without encouraging others.

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Waiver clause concern tabled

College lecturers are to engage the support of the TUC in their opposition to "waiver clauses" which effectively deny temporary staff protection from unfair dismissal and entitlement to redundancy pay.

Although it is the National Association of Teachers in Further and Higher Education which has tabled an amendment to this effect for next month's TUC in Blackpool, the union's concern at the growing use of short-term contracts is shared by the Association of University Teachers.

In both sectors, temporary staff who might otherwise qualify are being asked to sign away their employment rights by the use of the waiver clauses in employment contracts.

Their amendment has been tabled to a motion from the National Society of Metalworkers expressing concern at the way employers are promoting the use of temporary labour. It demands pressure from the general council to change employment legislation to outlaw waiver clauses and to remove the qualifying periods.

Nathie has also tabled an amendment seeking to change the Manpower Services Commission's policy on adult education and training.

The association was responding to a report prepared by Mr Geoffrey Cockburn on behalf of the Department of Education and Science and the Foreign and Commonwealth Office. It recommended that such consorts should be able to disburse grants provided by Youth Exchange Unit working alongside the Central Bureau for Educational Visits.

The APT argues that if the regional authorities draw up their own rules for awards they will be complicit in a system which it is proposed to simplify. If they do not have their own rules they will be duplicating the efforts of the YEU.

The process would be expensive and undesirable and would enable local authorities to disburse grants without encouraging others.

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Social work sets its priorities

by Paul Flather

The social work training council worked out priorities for the next years as it will not be able to fund its work at current levels.

It has decided to focus on pre-qualifying training courses and on development, particularly in the use of personal social services, which are anticipated to increase in demand.

But the fund is empty in spite of these measures and an extra sum being made available during the year. It means that existing students will be helped out by their initial fees but half the likely 2000 applications from new students just starting their OU courses next year will be turned down.

The university is concerned that this will deter students from taking up their places. It is the first time that assistance will have to be refused and one of the university's main principles of "open access" put in jeopardy.

The university says that the situation has resulted from the cut in the recurrent grant from the government which meant that savings had to be made from the assistance fund.

The two-year-old £500,000 fund for the unemployed which is explicitly earmarked by the Department of Education and Science is also expected to be overspent this year and students are unlikely to be able to follow their degrees as a result. About 10 per cent of next year's applicants will be unemployed, putting an additional strain on the fund which helped over 4,000 students on a means test last year.

The sharp increase in applications to its hardship fund, Pleas for help are up by a third already only halfway through the year.

The OUSA fund is considered to be very much a "last resort" but appeals for help with renting or buying televisions, without which courses cannot be followed, books, travel costs and baby-sitting costs have multiplied.

The chairman of the fund, Ms Pam McNay said she thought the increase in demand was directly related to the tougher means tests for the university's funds. "We want to see more money provided from the government and a guarantee that the unemployed fund will continue."

"Fifteen pounds may not seem a lot of money to give so that a student can attend tutorials but for many hard-up students it may mean not attending or spending less on the children," she said.

The council will continue efforts to encourage more social workers to residential and day care work to help training courses and emphasize the move towards "community care".

The council is also hoping to relax freeze on filling posts. At present there are still almost 50 vacancies in the council establishment of 173 posts with 12 vacancies among its 60 advisers and educational staff, and 35 vacancies among its 113 administrative staff.

Its priorities include examining developments in educational technology and strengthening links with bodies such as the Open University, the National Council for Voluntary Child Care Organisation, which is studying adult care, and the General Nursing Council, currently looking at care of the mentally handicapped.

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Concern as OU fund runs dry

by Felicity Jones

The Open University's hardship fund to help students out with their fees has already run dry halfway through the academic year. About 1000 new students will be refused help as a result.

The OU's financial assistance fund was reduced this year to £420,000 and the means test made up the income to the student's household was tightened in order to meet the shortfall and an anticipated increase in demand.

But the fund is empty in spite of these measures and an extra sum being made available during the year. It means that existing students will be helped out by their initial fees but half the likely 2000 applications from new students just starting their OU courses next year will be turned down.

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Bangor chooses new principal

The University College of North Wales, Bangor, has chosen Professor Eric Sutherland, pro vice-chancellor of Durham University, as its next principal. He will succeed Sir Charles Evans in October 1984, becoming only the fourth person to hold the post in the college's 100-year history.

Professor Sutherland, who is head of Durham's department of anthropology, is honorary secretary of the Royal Anthropological Institute and secretary general to the International Union for the Study of New Languages. He is a native of Aberystwyth, Dyfed, and took his first degree at the University College of Wales, Aberystwyth.

Research funding scrutinized

by Paul Flather
and Jon Turney

Academics and researchers have just one month to submit their views to an independent one-man inquiry into how Government should pay for strategic research. The one man is Sir Ronald Mason, former chief scientific adviser at the Ministry of Defence.

Sir Ronald's main focus will be the operation of the customer-contractor arrangements between Government departments and research councils, introduced after the Rothschild report in 1971. He has been asked to report to Sir David Phillips, chairman of the Advisory Board for the Research Councils, by October, so his findings will influence the ARC's advice to the Government (1984/87).

A review white paper in 1979 came out in favour of continuing the customer-contractor arrangements, under which funds formerly part of the Department of Education and Science's science vote for the research councils were transferred to other departments for contract research. But since then, concern has built up about departmental treatment of "strategic" research, which falls between Rothschild's original categories of "fundamental" and "applied" research.

Sir Ronald said this week his study will focus on the Agricultural and Natural Environment Research Councils, who receive 49 per cent and 35 per cent of their respective incomes from research commissions. However, he has asked for a wider remit so he is free

to study a series of broader secondary questions. Key questions he hopes to answer include: How has the Rothschild principle worked out in practice? How is research being commissioned nationally and internationally, and should the 10 per cent surcharge on commissions for "general research" proposed by Rothschild still apply? The question is whether nationally we have maintained the best possible system for commissioning strategic research," he said.

The three research councils originally subject to customer-contractor arrangements have all been unhappy with aspects of the system. The Medical Research Council succeeded in winning back control over the funds passed to the Department of Health in 1981 and both ARC and NERC have had awkward moments in their relations with customer departments. One ARC member said last week, "The problem is that NERC has unreliable customers, and ARC has a reliable customer in the Ministry of Agriculture, but they want to let ARC know to do the research."

NERC has four different customer departments, and the council's chairman, Sir Hermann Bondi has repeatedly voiced his fears about loss of support for strategic research, "the grey zone of researches that are only partly justified on purely scientific arguments, are not immediately of use to the customer, but lay the foundations for being able to answer questions which may be put in the future". The

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Dr Malcolm Green, the MSC's Scottish representative and former chairman of the Scottish Manpower Services Commission said employers could say they would arrange off-the-job training at a college but there was no requirement on them to do this, and the system could be open to abuse.

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Former MP joins South Bank

Mr Christopher Price, the former chairman of the Commons Select Committee on Education, Science and the Arts, has joined the staff of South Bank Polytechnic for six months on a half-time appointment to oversee policy on biotechnology and advise on publicity and public relations.

Natural posts

Four new members have been appointed to the Natural Environment Research Council. They are Professor Robert Clark, at the department of zoology at the University of Newcastle upon Tyne, Professor Richard Corns, head of the department of statistics at St Andrews University, Professor John Dewey, head of the department of geological sciences at Durham University and Mr Ferdinand Lammle of British Petroleum's Environmental Control Centre.

Careers stand-by

More than 800 local careers advisers were standing by this week to provide advice to sixth formers receiving A level results and looking for a place in higher education. Together they will operate the Advanced Further Education Information Service, organized by the Department of Education and Science, giving up to date information on vacancies at polytechnics and colleges. Local addresses and telephone numbers for the service can be obtained from the DES by phoning 01-928 9222 and asking for inquiries.

Principal dies

Mr James Scotland principal of Aberdeen College of Education for the past 22 years, has died, aged 65, two weeks before he was due to retire. Mr Scotland, a leading educationalist, was also a noted playwright, and comic scriptwriter for many Scots comedians including Stanley Baxter.

Press impact

The International Council for Scientific Unions has set up a new publishing arm, the ICSU Press. The council says it aims to use the press to help communications between scientists and decision makers, through news journals and news and reviews publications.

Down to business

Sheffield Polytechnic starts a new part-time Master of Business Administration course next month. The course lasts three years, with the first year in common with the MSc in management studies.

Lecturers stand up against limit to Bar

by Paul Flather

Law lecturers in universities and polytechnics are angry that they have not been consulted over fresh moves to restrict entry to the Bar.

A working party has just been set up by the senate of the Inns of Court and the Bar, the governing body of the legal profession, to report on new ways of controlling the numbers wanting to take up pupillage and settle into chambers.

Until recently the Bar used to follow an "open door" policy, allowing the market to decide who should succeed or fail. There were no barriers on anyone wishing to qualify providing he or she passed the law examination.

The policy has been changing in recent years, and from next month recruitment to the Bar will be limited to students obtaining a first or second

class degree. This caused concern in university and polytechnic law departments when it was proposed. Those entering with A levels need the equivalent of two C grade passes.

The working party will now consider additional "filters" on entry, for example by following Oxbridge entry procedures and putting more emphasis on interview and selection, looking at personality and suitability or perhaps introducing an additional entry test. An annual entry limit of 600 is being considered.

One of the main problems for the profession has been the high number of people called to the Bar who have taken pupillage only to gain qualifications to practise abroad. Malaysia, for example, has in recent years sent 200 students to train in Britain. It is now setting up its own law school.

Sir Arthur Power, secretary to the

senate, said there was tremendous pressure to get into chambers and a great bottleneck among those wanting to take up pupillage. In 1979 there had been 791 admitted to the Inns of Court school of law, with 528 intending to practise and 869 called to the Bar. By 1982, 1,332 were admitted to the school, 806 intended to practise and 936 were called to the Bar. The total number of barristers went up from 4,412 to 4,864.

Mr Harry Rejak, a lecturer in law at King's College London, attacked the new plans because they would favour "acceptable types" of recruits who had done well as students. As a former chairman of the Haldane Society of Socialist Lawyers he has protested strongly at the restriction on students who get third class degrees.

"One of the most serious aspects is that there has been no consultation

with universities or polytechnics on underlying issues. I am particularly worried that fewer and fewer law students will be admitted to the Bar in the future," he said.

The Society of Public Teachers of Law also believes it would be better to maintain the "open door" policy. Professor Philip Pettit of Bristol University, the society president, said there had been no consultation with the law schools on such changes.

Sir Arthur Power said they had no intention of stopping anyone who wanted to practise and added that academics would obviously have a different view from the profession. The senate did not want large numbers of qualified people without work to do. The 12-member working party, chaired by Lord Justice Griffiths, president of the senate, is expected to report before next Easter.

Skills warning from ASTMS

Government policies mean that Britain will lack a workforce with the higher skills needed for its industrial recovery, according to the Association of Scientific, Technical and Managerial Staffs.

The union, which has members in universities as well as industry, says that Britain is weakly placed compared with her industrial competitors and that cuts in higher education as a result of government policies will curtail opportunities for higher education which would lead to those higher skills.

In a report, it says that the proportion of 18-year-olds in higher education is only 60 per cent of the proportion found in other advanced countries. "The number of research scientists, graduate engineers per head of population in the UK is only half that in West Germany and one third that in Japan."

Government is curtailing opportunities through its policy of seeking reductions in public expenditure.

Although universities and local authorities have had some success in reducing the number of academic posts by 15 per cent between 1981/82 and 1984/85 and student numbers by 25,000, it seemed that so far proportionately more posts had been shed in engineering, technology, mathematics, computer science than other subjects.

This was because skill shortages make jobs outside easier to obtain. At universities a small increase in the proportion of the total number of students studying science subjects had been noted then offset by the decline in total numbers.

"In general reduced funding and higher staff/student ratios are adversely affecting the research carried out in universities and polytechnics. The general conclusion can only be that the highly skilled workers Britain's relatively weak position will tend to deteriorate further."

BBC gets black marks for 'Campus'

by Olga Wojtas
Scottish correspondent

Lecturers and students have accused the BBC of betraying Edinburgh University in its six-part series, *Campus*, which ended yesterday.

"Apart from anything else, it was bad television. Most of the staff have been watching the programme instead of taking Magdalen," said one Edinburgh academic, who preferred to remain anonymous.

Mr David Bleiman, regional official of the Association of University Teachers, said the series seemed to pandering to existing public prejudice about university life rather than seeking to correct this, and that many academics were upset by the poor light in which the university was shown.

BBC researchers had been in the university for some months before filming began, but despite this, the final result was "patently distorted". "It concentrated on the activities of one or two of the highest level of university staff, and didn't give a fair picture of the day to day work of research and teaching," said Mr Bleiman.

Edinburgh's student association is also critical of the series for its image of students, and is considering sending the BBC a letter of complaint.

Six sheets help handicapped

A new series of information sheets for disabled people wanting to enter higher education has been launched by the National Bureau for Handicapped Students.

The booklets are aimed both at potential students and staff who will have to deal with them, and are an accumulation of eight years of NBHS experience as a voluntary body encouraging participation in higher education by the disabled.

Several of the first six in the series have been compiled with other organizations such as the National Union of Students and the Royal National Institute for the Blind.

The first six comprise a guide to financial help for disabled students, a directory of specialist careers officers, advice to handicapped students and their parents on applying to higher education, meeting personal care needs, and pamphlets for the deaf and the blind.

Additional ones are planned for curriculum planning, special needs for Educationally Subnormal students, those with spine bifida, haemophilia or dyslexia, and for coordinators of handicapped students.

Single copies of the information sheets are available free to handicapped students sending an a/c and varying from 50p to £1.50 for others, from the NBHS, 40 Brunswick Square, London WC1N 1AZ.



A student from Breton Hall College of Higher Education models one of the designs included in an exhibition of final-year work on the BA and BEd fashion and textiles courses held at Wakefield City Art Gallery. Several of the collections were sold while other students were commissioned to produce further designs.

£4m project will spark computer-aided engineering

Leeds and Loughborough universities are about to embark on a £4m joint project in computer-aided design and manufacture in collaboration with engineering firms and the Department of Trade and Industry.

The project has grown out of an earlier £1m effort based at Leeds to develop geometric modelling techniques for engineering design. The first three-year project began winding down in June and the department and companies involved were impressed enough to look for a follow-on project to take the same techniques into manufacturing.

The link between Dr Alan de Pennington's team and Leeds and the department of engineering production at Loughborough is intended to achieve this. The Department of Trade and Industry is also keen to develop the project as part of its support for advanced manufacturing technology and will provide around a third of the money for the second stage.

Dr de Pennington said: "The transformation in the Department of Industry in the last two years has been amazing." He stressed their enthusiasm for the project. The rest of the money for the next three years will come from the two universities and around 10 outside firms, five more than had a stake in the first phase.

Dr de Pennington explained that the team's ultimate aim was to develop programmable automated manufacturing systems. Computer systems at the two universities will be linked by landlines and researchers from the companies involved will go to Leeds or Loughborough to gain experience with computer-aided design and manufacturing.

The two universities are one jump ahead of the Science and Engineering Research Council, which aims to launch a new directorate for the application of computers to manufacturing engineering later this year. The directorate will back research projects and postgraduate training to ensure that there are enough engineers to run the kind of system being developed in the Leeds-Loughborough project when they find their way on to the shop floor.

Overseas news

'New powers' move by Jayewardene

from D. B. Udalgama

COLOMBO
President J. R. Jayewardene has removed all vice chancellors and directors of university colleges and re-appointed them with more powers, in a move to take effective control of universities and maintain discipline more effectively.

The president, also minister for higher education, made the move as an emergency regulation under the Public Security Act. It is the sequel to turmoil in the universities, highlighted by some 500 undergraduates at Peradeniya University who protested against the suspension of six students.

Some university lecturers were accused by President Jayewardene in an address to his party of being the local leaders of a strategy which planned to take over the country through a three-stage plan.

The vice chancellor, Professor B. L. Panditharatne closed the university and ordered the students to quit the halls of residence but some of them defied the order, taking the dean of the faculty of science, Professor H. W. Dias, hostage for six hours and forcing the vice chancellor to agree to all their demands. They also felled trees to barricade the approaches to the halls and six students, including two Buddhist monks, started a "fast unto death" which they abandoned after agreement was reached.

But the authorities repudiated the agreement on the ground that it was obtained under duress and in a pre-dawn swoop on the halls the police evicted the demonstrators. The suspension of the students followed a report by a three-man committee which inquired into incidents of violence at Peradeniya last December in a clash between two student factions.

The dean and heads of departments have also been removed, and must be re-appointed or replaced by the vice chancellors or heads of university colleges. Not all of these dons may be re-appointed; some considered "unsuitable" will go out of office.

Professor S. F. Kaipage, chairman of the University Grants Commission and secretary of higher education, was quoted as saying that academics who would be responsible to the president and who would be able to turn things without hindrance will now be at the helm of the universities.

This situation will prevail for as long as the emergency is in force. The vice chancellors removed and re-appointed are: Professor Stanley Wijesundere (Colombo), Professor B. L. Panditharatne (Peradeniya), Professor Willie Mendis (Moratuwa), Professor S. L. Kekulewala (Kelaniya), Mr Karunasena (competent authority), Sir Jayawardhanapura, Professor S. Vithyananthan (Jaffna), Professor S. Rajaratnam (Batticaloa) and Professor G. P. Samarawickreme.

Meanwhile, students of the faculty of medicine at Colombo University have obtained an interdict from the Appeal Court on the second MB BS examination which was to have been held in the middle of July. They opposed students of the Private Medical College being allowed to sit the same exam as themselves, arguing that admission to the private medical college was on different criteria.

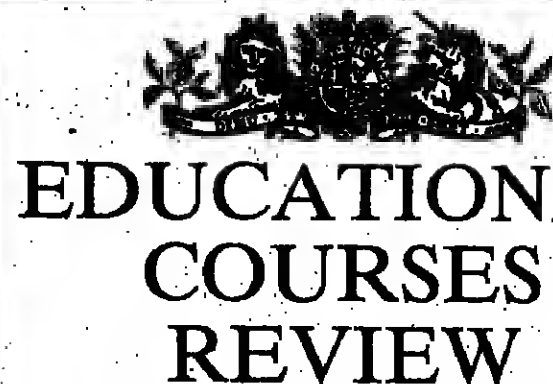
Query over Czech numbers

Czechoslovakia is said to have introduced massive cuts in university intakes this year, which may mean that only 50 per cent of applicants can obtain entrance to a university or institute of higher education.

According to a report from the Yugoslav news agency Tanjug there is a considerable shortage of jobs for graduates in Czechoslovakia, particularly for doctors, dentists, engineers and economists. The job situation, which is particularly grave in urban areas, has been building up over several years, so that the education authorities have been urging pupils finishing primary school at 14 not to go on to grammar school but to enter a vocational-technical school, leading to a qualification in some skilled trade.

Since academic education still carries a considerable prestige value in Czechoslovakia, as in other central European countries, this propaganda campaign was doomed to failure.

There can be no doubt that the world recession, which has hit Czechoslovakia badly, is making itself felt in the higher education sector, particularly in subjects and faculties not of immediate importance to the economy. There have, however, been several official denials recently that the applied research base is liable to be cut for lack of funds.



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Print course works out in newspaper

A four-week course in earlier this year at the London College of Printing at concessionary rates provided by the Inner London Education Authority has resulted in a pilot issue of a newspaper for the unemployed.

All 15 unemployed journalists who went on a refresher course promoted by the National Union of Journalists were eligible for the ILEA's rate of £1 for the unemployed on completion of the Greater London area.

Four of them decided to try to publish a newspaper for the unemployed in London with a view to extending the readership nationally.

Miss Shovelton, one of the four, said: "We are going to be a monthly paper from the end of October."

Maths education director of OU

Norman Gower, senior lecturer in mathematics at the Open University, has been appointed as the university's first director of the Centre for Mathematics Education. He has also been awarded a personal chair.

Professor Gower, 42, graduated from the City University in 1963 and worked as a mathematician for the English Electric Company before returning to City as a lecturer.

He was one of the first lecturers appointed at the Open University when it was established in 1969 and was made senior lecturer in 1971. For four years he was OU vice-chancellor (planning).

Non-director appointed to 'Welshman only' post

The Committee of Directors of Polytechnics has chosen a non-director to represent it on the Welsh Advisory Body for higher education, after an indication from the Welsh Office that only a Welshman would be acceptable.

Mr Clem Roberts, deputy director of the Polytechnic of Wales, has been recommended by the CDP following the resignation of the polytechnic's director, Dr John Davies from the WAB because of poor health.

Mr Roberts' appointment has also been approved by the Minister of State for Wales, Mr John Stradling Thomas. It follows some hesitation by the CDP, the polytechnic directors were unwilling to be represented by someone not on their committees, particularly since while their representation on outside bodies is increasing, they have not had to use an outsider before.

But the Welsh Office warned them that a director from a polytechnic

£4m project will spark computer-aided engineering

Leeds and Loughborough universities are about to embark on a £4m joint project in computer-aided design and manufacture in collaboration with engineering firms and the Department of Trade and Industry.

The project has grown out of an earlier £1m effort based at Leeds to develop geometric modelling techniques for engineering design. The first three-year project began winding down in June and the department and companies involved were impressed enough to look for a follow-on project to take the same techniques into manufacturing.

The link between Dr Alan de Pennington's team and Leeds and the department of engineering production at Loughborough is intended to achieve this. The Department of Trade and Industry is also keen to develop the project as part of its support for advanced manufacturing technology and will provide around a third of the money for the second stage.

Dr de Pennington said: "The transformation in the Department of Industry in the last two years has been

Overseas news

Call for restoration of research funding

from Lindsay Wright

WELLINGTON A substantial drop in research funding for New Zealand's universities has prompted approaches to the University Grants Committee by the universities to seek at least the restoration of the levels of funding of the mid-1960s. Auckland University has told the UGC that its research fund (used to finance major projects and more expensive equipment), its scholarship fund and its postdoctoral fellowships are all inadequate. A report by the university research committee says: "In constant value dollars the funds disbursed by the UGC Research Committee fell from \$2.59m (£1,126,000) in 1968 to \$1.11m (£480,000) in 1982, a decrease of 57 per cent."

The report pointed out that, in sharp contrast to the science budget of the National Research Advisory Council grew from \$80.3m (£39m) in 1968 to \$168.3m (£73m) in 1982, an 86 per cent increase. "To support the postgraduate teaching and research which provides the trained manpower which underpins this (national) effort, the UGC research fund should have grown to \$4.84m (£2m) last year."

The UGC scholarship fund, the Auckland report argued, has declined in constant dollars from \$2.52m (£1m) in 1968 to \$1.2m in 1982, and should have grown to \$4.70m (£2m). The scholarships, providing financial support for doctoral students, have been halved in real value over that period and are now internationally uncompetitive.

While overall student numbers rose

by 30 per cent over the decade to 1982 new PhD registrations have dropped and Auckland University has asked for the value of UGC postgraduate scholarships to be doubled to \$8000 (£3,478) a year - a little under the current Australian level.

Postdoctoral fellowships, seen by the New Zealand universities as both a vital source of knowledge and as an important recruitment avenue, have also been under threat in New Zealand. Australia's Research Grants Scheme is funding 130 such fellowships this year while New Zealand's UGC is funding none.

Individual universities fund fellowships from their own resources and Auckland University, New Zealand's largest, is able to award only three postdoctoral fellowships in 1983. The university has told the UGC that the one-year term of postdoctoral fellowships commonly offered in New Zealand is internationally unattractive and the salaries offered are uncompetitive.

Auckland has suggested that the UGC establish a postdoctoral fund from 1984 sufficient to allocate males to the universities for 30 new postdoctoral fellowships a year at \$21,600 (£9,300) a year. This would cost about \$2.4m (£1m) in 1984 and rise to \$4.8m (£2m) by 1986.

The current situation, the Auckland report said, is undermining the ability of New Zealand's universities to pursue a strong programme of postgraduate teaching and independent, as opposed to contract or misdirectioned, research.

Student press clamp down follows speech row

from Carolyn Dempster

JOHANNESBURG

Restrictions placed on the liberal University of Cape Town's student press in recent weeks have indicated that press freedom is not only at risk in the "commercial" sector in South Africa. In May the UCT authorities clamped down on the official campus student newspaper *Varsity* which reported a speech delivered by the Minister of Cooperation and Development (Black Affairs) Dr Piet Kooijse, to first-year political science students. In an almost unprecedented move the vice-chancellor Dr Stuart Saunders ordered the withdrawal of the publication because it was unethical and contained information given in privileged circumstances.

The editor of *Varsity*, Mr Nic Boraine and 17 other students were then charged with having defied an order by the vice-chancellor not to publish anything on the speech, and were prosecuted by a university disciplinary court.

Last week, the court imposed a suspended sentence of rustication, which (if it comes into effect) means the students may not hold office in any UCT student society, body or publication for two years.

The rumpus originally arose over an assurance (the political science department head, Professor Robert Schrire gave to Dr Kooijse) that the lecture was of the record.

The students denied that the professor informed the class of this arrangement and stressed that they would not have published it had this been the case. In any event, other students had a right to know what Dr Kooijse was saying.



Dr Piet Kooijse: told that speech was 'off the record'

particularly as the minister was airing liberal ideas on reform, they added.

The row assumed grave proportions when Dr Saunders first imposed a six-day ban on publication of the speech, which *Varsity* broke, and then banned *Varsity* and the entire SRC press from publishing anything on the issue until the matter was resolved.

About a week later a meeting of 700 staff and students voted in favour of a motion urging the university not to invite cabinet ministers to speak on campus.

It is ironic that this is the second time that the presence of the same national party cabinet minister has led to student administration friction on a liberal campus, with the authorities incident occurred at the University of the Witwatersrand during June 1981 during the height of anti-republic day rallies.

International help for university of the sea

by Thomas Land

A university to provide to developing countries a training programme in maritime administration is being set up in Sweden. The initiative is being taken by the Swedish Maritime Administration, the Swedish Maritime University and the Swedish Maritime Administration.

The World Maritime University will be based in Malmö, Sweden, and will have a faculty of 100. The primary function of the new

university is to provide training in maritime administration to developing countries. The university will be based in Malmö, Sweden, and will have a faculty of 100. The primary function of the new

university is to provide training in maritime administration to developing countries. The university will be based in Malmö, Sweden, and will have a faculty of 100. The primary function of the new

It's not nepotism as such, more artistic licence...



Scandal over art degree

from A. S. Abraham

BOMBAY The prestigious J. J. School of Art in Bombay, named after the Parsi philanthropist who founded it, and housed on the site of Rudyard Kipling's birth place has had its reputation badly tarnished by an examination scandal directly involving a director of art of Maharashtra State who is also a former principal of the institution.

The director's son, a student at the school, was given a first class by examiners. But the moderators, who re-assess the examiners' decisions and who finally decide, thought otherwise and gave him a second class.

The director, Mr. Daburao Sahas, in an extraordinary exercise of authority, then summoned a meeting of examiners and moderators. But the latter stuck to their guns and resigned en bloc in protest. The provincial education minister ordered a departmental inquiry into why the moderators had resigned.

The director asked a special committee, chaired by none other than himself, to reassess his son's papers. To his credit, the ten-member committee, comprising eminent people in the art and advertising fields, upheld the moderators' decision.

The art director remains in his post.

Equal rights law must be clarified

from Janet Hook

WASHINGTON

The Reagan administration has asked the Supreme Court to limit the application of a law prohibiting discrimination against women in schools and colleges that receive financial aid from the federal government.

Rejecting what it called an "expansive interpretation" of the law, the Justice Department has challenged the view that Title IX of the 1972 Education Amendments prohibits sex discrimination in all aspects of a university if any part of the institution receives federal assistance.

Instead, the Justice Department has advanced the controversial view that Title IX regulates only those specific courses within a university that directly receive federal aid.

Women's rights groups contend that the administration's reading of the law would severely weaken anti-discrimination sanctions, by allowing one part of a university to receive government subsidies while other parts practice sex discrimination.

Questions about the scope of Title IX have been raised in many court cases, including legal disputes over colleges' treatment of women in intercollegiate athletics. Although college sports programmes typically do not receive direct federal aid, Title IX has been used to prohibit unequal treatment of women athletes if other parts of the university receive federal aid. In such cases, it is argued, government money can be used to indirectly subsidize discriminatory practices.

The law expressly prohibits sex discrimination in "federally assisted education programmes or activities." The key legal question that has yet to be settled in court is how broadly the "programmes or activities" covered by Title IX are to be defined.

The narrow interpretation endorsed by the Justice Department has drawn heavy criticism from women's associations and civil rights advocates, and from their allies in Congress, who say that the law should not be limited to those specific departments or sub-units of a university that receive federal aid. The controversy has come, ironically, at a time when President Reagan, in an effort to boost his sagging political support among women and members of minority groups.

The Justice Department presented its interpretation of Title IX in papers presented in its position in a case that will be reviewed by the US Supreme Court during its 1983/84 term. The case has been brought by Grove City College, a small college in Pennsylvania, that claims it should not be required to comply with Title IX because it received no direct federal assistance. Although its students receive government grants and subsidized loans to help pay for their tuition, the college has argued that aid to its students does

not constitute aid to the institution. The college has not been accused of sex discrimination, but it has been taken to court for its refusal to sign a government form assuring its compliance with Title IX.

Grove City brought its case to Supreme Court after the federal appeals court ruled that the entire college was subject to the anti-sex-bias law because the whole institution benefited indirectly from students' receipt of tuition assistance.

Move to speed up women's chances of promotion

from Geoff Maslen

MELBOURNE

Tertiary institutions, the Commonwealth public service and private employers will have to offer accelerated promotion opportunities for women under legislation being planned by the Australian government.

The legislation would require public and private organizations to have a plan for the promotion of women. The plan would be a description of how the organization intended to provide increased opportunities for "appropriately qualified and experienced" women to move into more senior and responsible positions.

Businesses or institutions which failed to take affirmative action could suffer monetary penalties. For instance, a company's affirmative action policy could be taken into account when government contracts were being awarded.

The federal minister for education and youth affairs, Senator Susan Ryan, told an audience at Melbourne University last week that the affirmative action legislation would be part of the government's programme to eliminate all forms of discrimination against women.

The first step will be the passage of the Sex Discrimination Bill currently before the parliament which outlaw discrimination on the ground of sex, marital status or pregnancy in a broad range of areas including education and public and private employment. The bill also provides for protection against sexual harassment in education and employment.

The second step will be the introduction of the affirmative action programme in public and private employment. Next month, the government will release a green paper on affirmative action which will include draft legislation.

Senator Ryan said: "Every tertiary institution will be obliged by law to develop and submit to the human rights commission an affirmative action plan."

The plan will be a description of how the university intended to provide increased opportunities for women to move into more senior and responsible positions.

Reagan withdraws Nicaragua aid

from the United States

The United States is reneging on a \$7.5m loan to Nicaragua, approved two years ago to help fund education during the Somoza dynasty. The measure is interpreted in Washington and in Managua as another chapter in the Reagan administration's continuing efforts to limit aid to the Sandinista government for its alleged assistance to Marxist rebels elsewhere in Central America.

The legislation, said Nicaragua's education minister, Mr Carlos Tuner, is "another proof of the political and economic blockade imposed on

the country. The Justice Department has argued with the appeal court that the college must sign a Title IX compliance form, but has challenged its broad interpretation of the law's scope.

Rejecting the appeals court's view that the entire college benefited from the federal aid received by its students, the Justice Department said that view "would mean that if a student paid for his education with one dollar of federal funds, the entire school would automatically be subject to Title IX."

how the university intends to promote appropriately qualified and experienced women in an accelerated time frame to achieve reasonable progress towards equality over the next few years.

The draft legislation will be based on a private member's bill, put forward by Senator Ryan in 1981. That bill proposed to cover employers with 100 or more employees but it was now thought this figure may be too low.

The intention was that women would still be employed or promoted on the basis of merit, but the employers would assume responsibility for providing appropriate training programmes to give women the qualifications and experience they need to compete equally with men.

A recent study of the Commonwealth public service had shown that women made up only 2 per cent of those on the second division level. At present rates of employment and promotion, this figure would be 4 per cent by the year 2000. Senator Ryan considered this situation to be most unsatisfactory.

She said that fewer than 17 per cent of the total university full-time teaching and research staff were women, yet women made up 43 per cent of employees at the lowest level of lecturers and demonstrators. At the level of professor, women made up 15 per cent of the number, and the lowest level positions did not carry with them the benefits of tenure, so the majority of women academics held untenured positions.

University administrators and staff associations reacted cautiously to news of the planned legislation. Ms Jane Nichols, a research officer with the Federation of Australian University Staff Associations said that many academics would be alarmed if university appointments were made rather than on the ground of scholarly merit.

But she said women were often disadvantaged in not being able to have as many research papers published as men, in having Australian rather than overseas second and third degree qualifications, and in being affected by their employment chances and in not being as mobile as men in seeking new jobs.

The US Agency for International Development has just built AUC new library and contributed 27 per cent of the university's \$17m budget. But with only \$8.5m in endowment, the school also depends on contributions from alumni and corporations.

"Mobil, ARAMCO, Amoco and Chase Manhattan gave to the school because they plan to be here in the Middle East for a long time," said Dr Pedersen. "They want to support other American presences and we're one of the few visible US institutions in the area for a long time."

Under Nasser, after the 1967 war relations were cut with the US until 1973 and the American University in Cairo was the only American institution operating there - a window to the world, according to Dr Pedersen, a former US ambassador to Hungary.

"Egypt is a middle-sized country where everyone needs to learn how to

Of mice and men and money

Sally Festing visits the Jackson Lab in Bar Harbor, Maine.

WORLDWIDE

Mount Desert Island is a strange place for a huge biomedical research centre. But its wild beauty attracted wealthy Americans and their private philanthropy floated the Jackson Laboratory more than 50 years ago. The landscape came first and in a way it still does; as a potent backdrop to everything that happens within 200 odd square miles, surrounded and deeply invaded by the sea.

Maybe it is vocation land for the milling tourists; for the majority of Maine's population however, summer is the peak of activity and this includes Bar Harbor's scientists. Not until the fall does routine simmer down so they can go on holiday.

From all over the world; geneticists, immunologists, histologists, virologists, cell biologists, embryologists and people involved in aspects of cancer research, fly in on the island's 12-seater biplane to take part in courses, exchange information and pick the brains of the residents. Three years ago Nobel-prizewinner George Snell put the Jackson Lab on the map for his work on tissue transplantation, investigations that laid the foundations for kidney and other organ transplants.

On hank ground it was no surprise; long overdue, is the comment one receives from those who understand the quality of his work. Yet it caused a flurry of excitement and while they were in the spotlight, it was a good time to ask what it is, apart from the physical milieu, that makes the lab unique.

The portrait of founding director, Dr Clarence Cook Little in the reception area suggests an answer. This immensely influential, bright-eyed man in a white lab coat holds a mouse by its tail to the palm of one hand; beside him, a wooden mouse cage betrays the date and several other mice inside an observation jar, plus a card index box spell out the story. At a time when very little work had been done in the field, Little saw the key to biomedical studies of the future locked in mammalian

genetics and for implementing such studies, he chose the mouse. Today, much of his theory has been realized; his labs have the largest number of inbred, or constitutionally identical mice strains anywhere, and the largest concentration of mammalian geneticists. There are 35 scientists in a total of 500 staff.

But if cancer research was foremost in the mind of the director and the independent Jackson laboratory; other biomedical studies were soon involved. Mice are similar to humans in many physiological traits and they develop or inherit many of the same diseases; the initial five or six strains exhibited characteristics that paralleled such human problems as muscular dystrophy, anaemia and diabetes.

Moreover, they were ideal for experimental tissue grafting. If it is possible to transplant tissue from one inbred mouse to another, what controls the capacity for acceptance or rejection? Then practical problems of husbandry; reproduction and diseases of the mice themselves became important.

Staff moved in to work with the fantastic collection of weird mutant strains and the lab began to answer a far flung demand for its stocks from other research institutions. The resource side of the venture is important in its own right because, when a university professor retires, his stocks disappear with him. It was pointed out that plenty of American universities have long-standing commitments in fact but none in mice, whereas the Jackson lab has provided a continuous home for its colonies, appointing and retaining staff to work with them. Two

million mice are distributed annually throughout the world providing approximately one half of the lab's income; remaining funds are provided by National Institutes of Health and other public grants (50 per cent) and private donations (2.5 per cent). But the time has come to reevaluate, says the present director, Dr Barbara Sanford, who hopes that the private contribution will increase proportionately.

To some extent the lab's careful image promotion and its efforts to inform the public about its work reflect the debt it owes to private support. A fund-raising committee keeps an office in the building and twice a week, on hourly film and discussion programme is held for members of the public in a new lecture theatre. To the uninitiated, Mendelian laws of inheritance aren't spelled out; fat mice, thin mice, naked (hairless) mice and crooked mice blown up on a screen and the personal contribution of different scientists is explained in their own words. This is what we are trying to do, this is its relevance.

No moral justification is felt necessary for using animals. Would a similar organization in Britain invite comment so freely? It could be argued that most people are convinced by rational explanations and hard core extremists won't be convinced by anything; but the fact remains that we have most extremists. Perhaps, though, the most emotive claim is that research has once again returned to cancer; and who doubts, a respected ex-member of the staff told me, that when it comes, our real understanding of cancer will be based on work with mice.

Promoting interest in basic research and harnessing talent are the objects of the summer schools; to which end the lab opens its doors for nine weeks to about 20 selected school leavers, college and graduate students. Each one conducts a lab or her research project in conjunction with one of the staff scientists. They tackle quite sophisticated problems in varied fields and



Winter wonderland: the laboratory stands amid the wild beauty of Mount Desert Island.

with luck, the results can be incorporated directly into the scientists' work. But the great tribute to the course is that more than half its past students remain in science, according to a 1979 survey, 70 per cent take PhDs and two have collected Nobel prizes.

Dr Sanford is qualified both in business studies and as a mammalian geneticist. She admitted that not many women have major administrative jobs at her level but she prelers to play down the fact and she is excited by the challenge. Following two years' stability since she took over, the lab is on the brink of expansion.

The fashion in biology is towards genetic engineering and they have always promoted an interdisciplinary approach. Real progress, she feels, will result from liaison between classical

geneticists and molecular biologists. A wing named in Snell's honour affords the space and they are on the look-out for new scientists.

Never was it more important to find the right man or woman for the job. Work can not be the sole consideration; it is useless taking on someone who hankers for ballet or the big city, or where a wife or husband studies.

say, Ancient Egypt. Since the island is isolated and Maine winters are harsh, a quality of self sufficiency is important. Fine for an outdoor lover, someone prepared to take up cross-country skiing, or raise pine trees and enjoy the social activities of a close-knit community. Most of all, it helps if the Jackson lab recruit is alive to the raw scenery of Acadia National Park, for there is richness in the silver birch and granite peaks.

Ben Barber reports on the American University in Cairo, the 'Stanford of Egypt'

Where Middle East meets Mid-West

In the calm and shady courtyards of the American University in Cairo, Egyptian and American students chat over coffee and textbooks between classes.

In their stylish French and American clothes they cut a different figure from the majority of Cairo's 14 million inhabitants, many wearing galabias and black head covers for women.

"We're the Harvard, the Stanford of Egypt," says AUC president Dr Richard Pedersen in a recent interview here. "We've got the top intellectual clientele, the best students - people from the establishment."

Assassinated President Anwar El-Sadat's daughter-in-law studied here and President Mubarak's wife graduated last year and is chairwoman of the International alumni committee. Mubarak's two sons also attend the 63-year-old university and the Shah of Iran's son also studied here along with children of other African and Middle Eastern leaders.

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"Egypt is a middle-sized country where everyone needs to learn how to

communicate with foreign cultures," says AUC graduate Hendi Saleh, a diplomat with the Egyptian embassy in Washington. "We are not an India or a China that can afford to close its borders."

"The graduates of AUC are better equipped to deal with the Western world. Through communication with foreigners they have learned to deal with the outside world."

The American style of education differs from the French style education offered free to 300,000 Egyptian students at the government-run Cairo and Ain Shams universities. AUC classes are small, students can meet privately with teachers, half of whom are American and they write original papers.

"We teach them to think analytically, to solve problems, not push paper. That's the American system. The faculty-student ratio is 12 or 13 students per teacher."

The vast Egyptian university system which burgeoned in 1961 when nationalized by Nasser - when, according to diplomat Saleh, education became free like water - puts emphasis on memorization of texts and lectures rather than individual input.

Tuition at the American University is \$1,098 per year for Egyptians and \$4,000 for Americans. Although the average income of Egyptians is only \$480 per year according to the World Bank Development Report, university officials claim the stringent English fluency requirement is more a barrier to applicants than the tuition.

More than 10,000 students also take special adult education courses such as language and office skills at the university which is expanding its popular business management courses. Americans largely study Arabic and Middle Eastern studies.

"With all political sides favourable to us, as long as we stay out of politics, I



AUC students chat over coffee and textbooks.

do not see any trouble," said Pedersen. And with the growing involvement of the United States in this part of the world, due to oil and the Arab-Israeli conflicts, AUC seems likely to play an increasingly vital role as a cultural bridge between these two widely differing economies, religions and languages, despite the tension of a cultural encounter.

AUC offers an American-style liberal arts education plus facility to American language and lifestyle through contact with American students and faculty. But relations between the 200 US undergraduates and 1,800 Egyptian students are said to be generally distant and cold.

In its extreme, one American student barricaded the door to his apartment in terror after his Egyptian girlfriend refused her father's demands that she take a virginity test. The brothers of the girl phoned to say they would come to kill him. Violence was avoided in this case but the gap between cultures was perhaps the real culprit.

"American students don't mingle with Egyptians," said last year's student union president Mustafa Ghali. "There's no bitterness between us but they tend to stay separate."

"Some don't adopt to our open, friendly style of life. They're the ones who look down on Egyptians. I tend to be reserved, which is unlike myself,

when I first meet foreigners because I've been looked down on when I first met someone because I'm Egyptian."

Ghali, who speaks a perfectly accented "American" learned in Saudi Arabia, admitted however in an interview in the bustling student office off the cafeteria, "some Americans and Egyptians do get on very well."

"Egyptians see Americans as easier to get along with - less stiff - than Germans or French," said Nabil Farouk, a university spokesman. The Russians were here for many years but it was very difficult for Egyptians to be friendly to them.

According to some American students, it is the friendliness of the Egyptians itself which grates, driving the two communities apart.

"I've been able to adapt very well to life in Cairo but now it's beginning to get on my nerves," said Dean Ricciardi, a 1982 year-abroad student from New York State University in Binghamton.

"Once the novelty wears off there's a deep state of depression. One American committed suicide here."

plained: "at first you say it's a different culture. But then you have your bad days and it gets to you. People bang into you and don't say 'excuse me'. They take cigarettes without asking. He resents the invasion of privacy in this crowded, poor nation where people tend to take things as they come. They say *Inshallah* all the time. It means 'God willing'. It's not like the Western attitude that you have your opportunity one time and you've got to grab for it. They believe it comes around and around."

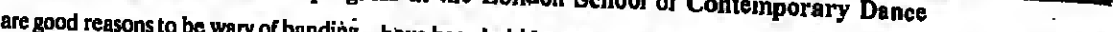
"Americans here also feel guilt and then hostility towards the presence of servants. They come and clean our rooms and treat us like gods," said Ricciardi. "After a while though you feel like you're just another penny they can make."

"I have not been invited to people's homes from the university," said Martha Dennis, of the University of California at La Habra. "People are very friendly but most won't go out of their way to meet Americans. It's like two teams."

"It's difficult to have an American friend," explained one Egyptian woman student. "They don't try to get along and are very critical of Egyptian traditions. In Europe and America a teenager can have sex. It's their way and I can understand. They should try and understand our culture."

Victoria Keir outlines the financial difficulties faced by dance students

FREE



"But people are beginning to question this—and we hope that slowly attitudes will begin to change."

He is sceptical about complaints of government cuts and lack of money. Obviously, that has been the problem worse. But a lot of the work

John O'Leary assesses the British Council's higher education division

Kent State 1970: lack of "appreciation of the socio-economic factors which may dispose people to behave in a manner inimical to the legislation of the day?"



government and among sections of the general public. The official crime rate had doubled since 1940, and fears were growing that the streets were no longer safe. The prisons were filled to bursting point, and their avowed aim of rehabilitation was clearly a sham.

the name of the Law Enforcement Assistance Administration, whose essential task was to give funds to states in order that they could improve their criminal justice systems. As far as police education was concerned, the most important development by the LEAA was the setting up of LEAP; the

The author teaches at New College Durham.

er management education at Lough
borough University.

Supplement from House of Commons
London: Bell & Co. 1847

[illegible]

numbers of overseas students to keep the jam on our bread. Our financial

The universities are no longer to

to be indulging in all these forms of

effects of such narrow applications.

management education in Long
borough University

The early university lectures in chemistry were given as service courses in the training of medical practitioners, and it is appropriate to begin in Scotland with the foundation of the University of Edinburgh medical faculty in 1726. Four founder professors were appointed for life—but without salary! Their income came from fee-paying students who included interested laymen as well as those working for medical degrees. Chemistry lectures on pharmaceutical preparations were offered but other related topics such as formulation and essential oils were also discussed. The business acumen of the founder professors was impressive as the course fee of three guineas per session included opportunities for the students to observe the professors preparing drugs which were subsequently sold to local apothecaries.

This immediate need to be sensitive to the requirements of their students, from whom they derived a substantial income, and to be in some contact with the working life of the city, gave a flexibility of approach to teaching which contrasted sharply with that at Oxford and Cambridge. The richly endowed English universities were mainly preoccupied with the training of clergymen and not exposed to any pressures conducive to change.

Chemistry continued to be taught by medical men as an important though minority subject, but in 1747 William Cullen was made lecturer in chemistry at the University of Glasgow. This appears to be the first independent appointment in the subject in the UK. Cullen was also the first teacher in Scotland to see chemistry not merely as a branch of pharmacy but a subject in its own right with applications in fields of technical interest such as textile bleaching, soap making and fermentation. He went on to become a professor at Edinburgh.

Joseph Black attended Cullen's lectures and worked as his laboratory assistant. He was undoubtedly influenced by the only research paper which Cullen published (1756) entitled *Of the Cold Produced by Evaporating Fluids and Other Means of Producing Cold?* This was a seminal piece of work since Black went on to discover the phenomenon of latent heat.

In the eighteenth century only those men willing to accept the 39 Articles of the Anglican Faith could graduate from the English universities or teach in schools. The non-conformists were therefore driven to create the Dissenting Academies primarily to train their preachers and ministers. One of the greatest English chemists of the century, Joseph Priestley, received a Calvinist upbringing and was trained for the ministry at the Dissenting Academy at Daventry. There his independent and wide ranging mind was stimulated and the foundations laid for his subsequent polymath career.

The Manchester Dissenting Academy was established in 1786 with a course of five years duration for students training for the ministry and a shorter course for those intending to enter the professions. The curriculum included classical languages and subjects such as religious instruction, history, philosophy appropriate for ministers of religion. In addition, John Dalton, who was professor of mathematics and experimental philosophy, taught chemistry as did Thomas Henry whose courses included *Chemistry with a Reference to Arts and Manufactures*.

These academics were a radical development in education away from the Oxbridge tradition where classical languages, and little else, were regarded as suitable training for Anglican clergymen and sufficient for training for a gentleman's mind. The movement was towards a more liberal education to include modern as well as classical languages, science and other contemporary subjects. Support for these changes came from a number of sources including influential provincial associations such as the Literary and Philosophical Society in Manchester and the Lunar Society in Birmingham. How far this movement might have developed we cannot know since it was arrested by an epoch-making event in another country, the French Revolution of 1789.

In sweeping away the old regime of King and Church, the French revolutionaries saw the sciences as the key to educational reform. One effect was the establishment of schools equipped with laboratories where there would be less emphasis on the classics and more on science. This development proved difficult to sustain because of the lack of suitable teachers and, especially, of

Compared with those countries who are our industrial competitors we have consistently produced fewer science graduates. Given the Government's policy of eroding this slim foundation of our scientific future, it has never been more important to ensure that the science graduates we do produce are as well equipped as possible. Although the number of UK chemistry graduates having fallen from a peak of 2,650 in 1969 appeared, until the most recent cuts, to be settling at around 2,000 per annum, these figures refer to a period in which both the number of school leavers with A level chemistry and the university population in general has been expanding. R. C. POLLER looks at how increasing numbers of qualified school leavers have been rejecting tertiary education in chemistry and at the other criticisms which have been levelled at our courses.

Finding a formula for British success

adequate funds. In 1794 the École Polytechnique was established to provide basic training for engineers but also to encourage study of the sciences, so that mathematics, physics and chemistry were taught.

In Britain the liberal democrats and dissenters, who were the educational reformers, generally supported the French revolution. As the Establishment in Britain saw the threat to their system from across the Channel the reformers were branded as traitors and France and Britain were soon at war. The homes and chapels of the dissenters were attacked by mobs and Priestley sought refuge in the United States after his home and scientific library were destroyed. Thus a powerful movement for reform in higher education was, for a time, halted.

In 1808 John Playfair, professor of mathematics at the University of Edinburgh, spearheaded an attack on the universities of Oxford and Cambridge for poor teaching and failure to encourage the sciences. This attack was supported by other leading educationalists and eventually, Edward Coplestone of Oriel College, Oxford published an article entitled *Reply to the Calumnies of the Edinburgh Review Regarding Oxford*.

He maintained that sciences were taught at Oxford (though not required for a degree nor examined) and his long justification of the *status quo* included the following: "Never let us believe that the improvement of chemical arts, however much it may tend to the augmentation of national riches, can supersede the use of that intellectual laboratory where the sages of Greece explored the hidden elements of which man consists".

These attacks had little impact on the two English universities but elsewhere there was a new movement towards a broadening of education with respect to both availability and content. A need was perceived for a more utilitarian system of higher education to deepen his about him, including the rapidly developing new industries. Among the many influential figures seeking to deflect higher education away from its narrow preoccupation with the classical languages towards a broader curriculum which would include the sciences was Jeremy Bentham. He and his supporters

founded "the University of London" in 1828.

University College, as it was subsequently named, was open to all men regardless of religious beliefs. The curriculum included "experimental science", ie chemistry, physics and botany as well as geography, economics and other modern subjects and also classics and mathematics. The prospect of university education being made available to free-thinkers, dissenters, Roman Catholics and Jews so horrified the Anglican establishment that they attempted to remove the offending institution. When this failed, they founded a rival establishment—King's College. Despite the religious and conservative principles of the founders of King's College, where all staff had to be practising members of the Church of England no such restriction was placed on the students. Also the range of subjects taught at KC was as broad and liberal as that at UCL.

The first degrees offered by the University of London were in arts, laws, and medicine. First MB students were required to pass an examination in chemistry, emphasizing the continuing service role of the subject. However, the BA could be taken in mathematics or natural philosophy and examined for honours in various subjects including chemistry.

The early courses laid considerable emphasis on applied chemistry as can be seen from the quotation from the UCL Calendar for 1833/34: "It will be a prominent object of the (chemistry) course to develop the principles of the important chemical manufactures such as glass making, bleaching, dyeing, calico printing, working of metals, gas making, brewing, distilling and the preparation of various chemical products used in pharmacy". There was a lesson held at 7pm for "Persons Practically Engaged in Manufactures".

At the end of the 1830s the authorities of the University of London, after many discussions with prominent educationalists and scientists, introduced the Bachelor of Science degree. There was controversy between the advocates of a specialized professional BSc and those who favoured a broader more liberal science degree. The latter triumphed and candidates for the first BSc had to show competence in mathematics, physics, chemistry, the biological sciences, and logic with ethics.



Prince Albert, with his German training, saw the need to improve scientific education in Britain and his influential position at Queen's Consort enabled him to act. He consulted Leibniz in 1842 about establishing a British College of Chemistry. Leibniz, at the University of Göttingen, was stimulating great interest in chemistry both as a subject in its own right and for its practical applications. His teaching methods, with their emphasis on practical work and careful analysis, were much admired.

In 1845 the Royal College of Chemistry was established in London and was modelled on the Göttingen department with Leibniz's ex-pupil A. W. Hofmann as its first professor. The college was privately funded and it aimed to promote the science of chemistry and its application to agriculture, arts, manufactures and medicine. Degrees could not be awarded but after the successful completion of the analytical course, and a piece of research deemed worthy of publication, a Testimonial of Proficiency was given.

In its first independent existence of eight years the college did excellent work and numbered among its students many who were to become famous chemists. However, the money subscribed was insufficient for successful launching of the enterprise and when it became clear that there were no ultra-fast profits to be made, interest among the financial backers quickly waned. Hofmann made valiant efforts to keep it going; he did not draw his full salary, refused his share of the students' fees and finally gave up the house which had been assigned to him. But the financial problems were too great and in 1853 the Royal College of Chemistry merged with the School of Mines.

The independent discovery of the dye mauve, the perspicacious assessment and rapid exploitation of the

commercial possibilities thereof by Hofmann's 18-year-old assistant W. H. Perkin, is well documented. In the present context it is interesting to note that Hofmann, despite the distinctly practical and applied nature of the chemistry he taught, tried to dissuade Perkin from throwing up his studies and going into business as a dyestuffs manufacturer.

During the nineteenth century many other colleges of higher education were established which offered science as an important part of the curriculum. These included the Royal College of Science and what are now the universities of Birmingham, Bristol, Durham, Leeds, Liverpool, Manchester, Nottingham, Sheffield and Southampton. However, it was becoming clear that the provision of scientific and technological education in Germany and France far exceeded anything that was available in Britain (by 1900 approximately 17,000, England and Wales 3,000).

The disquiet over this situation was considerable and led to the establishment in 1872 of the Royal Commission on Scientific Instruction and the Advancement of Science chaired by the Duke of Devonshire. Enormous amounts of evidence were taken and at least eight reports issued. Among the many recommendations made was one that university scientific education should not be specialized. Most of the proposals were ignored but a few changes resulted including improvements to the South Kensington Colleges and an annual state grant of £4,000 was made for the endowment of research. Generally, however, the complacent view prevailed that Britain had the world in engineering without the benefit of formal training and, despite much evidence to the contrary, would do so in science.

Among the reformers who continued to press for more science in university and college curricula there was some disagreement as to content. The majority favoured a broad liberal scientific education rather than a narrow specialized training. But then a shift began from the broad to the narrow, which seemed quite spontaneous. Those who had inaugurated the BSc degree of London University had taken some pains to ensure that the graduate would be broadly educated in science. Following strong advocacy from many distinguished witnesses, the Devonshire Commission wholeheartedly supported this view. Nevertheless, in 1876 the university changed the regulations so as to make the BSc degree much more specialized. Earlier requirements that candidates should show evidence of general culture, as well as a knowledge of both biological and physical sciences were swept aside. Candidates would select three science subjects for the final or Part II examination and could then take an honours paper in a single subject. It is clear that there was no pressure from industry for more specialization; the German chemical industry might welcome highly

trained chemists, not so their British counterparts.

There is evidence that trends elsewhere in education were towards narrowness, probably encouraged by increasing use of written examination. It is difficult to argue with the view that increasing specialization in scientific education arose not from pressures from scientists or potential employers, but simply because examiners and examinees found it more convenient.

From 1876 onwards the increasing specialization of the candidates is shown by the changing examination requirements. At first any three sciences subjects could be offered at the part II or final examination for the pass degree followed by an honours paper in a single subject. In 1910 the pass degree students were segregated from those reading for honours. The first group took the final examination in three subjects as before, but the honours students were examined in only two subjects, one as principal and the other at subsidiary level.

In the early years of this century there was little improvement in the output of chemistry graduates from Britain, while Germany continued to increase its enormous lead in both technology and in technological education. This country paid dearly in 1914 for its neglect of chemistry but between the two wars there was a slow and modest improvement in the provision for chemical education. It was this period, when small numbers of chemists graduated and all could expect to practise their subject, that produced the men who would begin to build up the present chemistry department.

Since 1945 various governments have expanded higher education with particular emphasis on scientific subjects. The demand for specialist graduates in chemistry increased for almost twenty-five years, but then, as already noted, it waned and the maximum output occurred in 1969.

There has been a progressive rejection of the utilitarian and applied aspects of the subject. The full title of the body responsible for chemistry in the University of London—"The Board of Studies in Chemistry and Chemical Industries"—reminds us that applied studies were once important, but the last three words have little significance today. Paradoxically university teachers advance in their profession not by their ability to teach, but by their success in research which, in Britain, means pure research. Inevitably the degree is oriented towards producing research workers in pure chemistry, even though the majority of graduates lack both the desire and opportunity to pursue this path.

Much more disturbing is that all pretensions to the idea that the graduate should be well educated have been abandoned. Breadth of learning is not expected of today's chemistry graduate: specialization begins in school and is welcomed and encouraged at university.

The specialized single honours degree of the type introduced at the beginning of the century remains as the centre of most chemistry departments. This specialized degree course is of excellent scientific quality and is perfectly suitable for the able dedicated student who will still be successful in obtaining one of the rapidly diminishing number of research posts and who will provide the necessary educational breadth for himself.

The majority of our undergraduates are able and aware young people who have already demonstrated that they have the intelligence to cope with, and benefit from, a course in higher education, but whose commitment to chemistry is limited. They have come to university with the still substantially correct belief that a degree will enable them to get a better job.

As this country knows to its cost, technological riches do not automatically accrue to nations with distinguished attainments in pure science. We should surely be aiming at increasing the undergraduate population of our chemistry departments and could do this by welcoming the idea of the science generalist and, in addition, to traditional specialist degrees offer broader science courses.

The aim would be to produce increasing numbers of truly educated graduates with informed but flexible minds, equipped for the challenging and changing careers that will be available in the years ahead.

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Alison Calanda examines the issues raised in the Royal Society of Chemistry's survey of the university cuts

Chain reaction of cuts leads to testing times

Many observers thought that chemistry would fare better than other subjects when the Government announced cuts in university finance. Now 18 months further on, with the forced contraction of the system well under way, it is an opportune time to consider what the real effects on chemistry teaching and research have been. Has the streamlining been successful in producing better results, more cost-effective solutions, or has it merely hampered the development of new technologies and vital new areas of chemical research?

This and other pertinent questions are answered in a report prepared by the Committee of Heads of University Chemistry Departments (CHUCD) published by the Royal Society of Chemistry.

Based on an investigation and survey of UK university chemistry departments, of which 73 per cent replied, the report paints a disquieting picture of the worsening situation over the past decade and predicts a gloomy future for the teaching and study of chemistry as a subject in our universities.

Slipping levels form a major part of the problem and the latest round of cuts in university finance has merely exacerbated an already disturbing decline. Since 1973 there has been a reduction in most categories of staff—both in the academic, technical and clerical fields (Tables 1 and 2).

However, an even more serious aspect to the problem emerges in the age distribution of teaching staff. The report shows that this has changed considerably since 1973 (Table 3), with the age peak shifting over the past 10 years from the 35-39 age group in 1973/74 to the 45-49 age group in 1981/82. Thus the increase of staff at professorial and senior lecturer level (Table 1) must be set against the substantial decrease in the number of young teaching staff. The latter has been caused largely by the restricted recruitment programme resulting from the cuts.

As a result, a number of university chemistry departments report no new or more senior staff for the past five or more years! This has happened in a discipline where it is arguable that the exciting new ideas so necessary for the continued health of research are generated in greater proportion by the younger age groups.

The report also points out that as far as age distribution patterns are concerned, the Government's three-year programme of restrictions has severely aggravated a situation which would, in any case, have arisen. Even before the Government introduced financial restrictions, the vast increases in staff recruitment which took place after the Robbins report and the subsequent promotion of that 1960s intake of staff led to concern about the absence of junior lecturers.

A steady programme of recruitment would therefore seem to be the optimum solution, as sporadic and enthusiastic recruitment bursts pose problems for later years. This, of course, throws the recently advertised "new blood" posts into a new light. Although welcoming them as a step in the right direction the CHUCD stresses that in order to ensure a real improvement in the situation, the scheme would have to remain in operation over a prolonged period.

Research therefore suffers from a lack of young recruits, but teaching too has suffered. Set against the background of slowly decreasing numbers of undergraduate students in chemistry, the overall drop in staff levels has meant a significant increase in the student staff ratio from under 7:1 to over 9:1. The more staff hours allocated to



Students at a chemistry lecture in Paris circa 1885.

teaching, the less is spent on research and development and vice versa.

A related problem is the career structure of the university lecturer. There is little doubt that in the past many postgraduate students undertook postdoctoral research as a natural step to a university lectureship. Nowadays, even the most able postgraduate fellow has only an outside chance of a permanent university post. The incentive to apply for post doctoral work even when it is available is therefore low.

Indeed, says the report, there are now many older fellows with several years of postdoctoral experience trapped in academic limbo. There are very few permanent academic posts to apply for, and industry regards these particular candidates as either overqualified or too old or too expensive. Their increasing numbers can hardly be encouraging to those about to embark on research. A little further up the career ladder, lecturers who merit promotion to readership cannot move up.

Technical revolution is out of reach

The report also puts the reduction in support staff high on the list of problems. This has been similar to cuts in the number of academic staff. In some areas where developments in technology have been particularly rapid, university departments have found that they could not compete favourably with industry and commerce on technical salary scales for certain specialized staff, for instance in electronics. To "remedy" the situation fewer staff were employed.

The technical revolution which has taken place in industry and commerce over the past 10 years would seem to remain sadly out of reach to the average university chemistry department. Indeed the statistics in Table 2 do little to reflect the advances, as they show a reduction in technical staff from 1,439 in 1973 to 1,090 in 1982. Little wonder that many departments are facing acute problems in servicing, operating and maintenance costs of equipment.

The reduction in technical staff is coupled with a reduction in purchasing power of the equipment grant, says the report. Ten years ago in 1973/74, the University Grants Committee grant would have purchased 17 per cent more and was adequate to maintain standards. But it was savagely cut the following year to less than half in terms of purchasing power, and remained at this lower level for the next five years.

Increases in 1979-80 and 1980-81 did little to balance the accumulated deficit from the years of underfunding, and many departments are now finding that more and more of their annual equipment grant is required just to replace standard apparatus. Need to nothing is left for the purchase of new instruments. The problem is compounded by the reduction in purchasing power of the departmental grants to chemistry departments (Table 4). From 1978/79 to 1981/82 the reduction is well over 20 per cent and this, according to the report, is a minimum figure.

In spite of all this, departments have had to cope with the development of new courses to keep pace with changes in subjects and the demands of industry, increasing student numbers and ever-increasing international pressure

for research.

The way research is organized in the UK means that a high proportion of fundamental chemical research is carried out in universities. With much unreliable and out-of-date equipment, difficulties in the purchase of new instruments and cutbacks in library purchases of primary research journals, how are we in the UK to compete internationally in research? How are we to train our undergraduates in the use of new sophisticated and unavoidably expensive equipment which in turn requires high levels of expertise in the technical staff?

The report makes it clear that almost all the changes imposed on chemistry departments have made the pursuit of excellence in both teaching and research more difficult. To their credit, chemistry department staff have done much to achieve more with less resources. They have obtained funding from new sources and shouldered new teaching loads and additional clerical work. But starvation of funds has produced inefficiencies. The universities have an immediate and continuing commitment to their undergraduate students. Research has therefore suffered and the cutbacks have also had a boomerang effect on teaching.

Research and teaching will suffer

What then of the future? The report concludes that in the long term the effects of these measures will be devastating. Early retirements projected for the next two years will lead to an additional reduction in academic staff of 5-10 per cent by next year. The projected drop is most likely to be in the 35+ age group, where numbers are already below the steady state values.

The age distribution will thus be even more skewed. In the absence of any remedial action the present age peak will be replaced by a similar but younger one. Research and teaching will once again suffer.

The message is clear. A planned intake of new young staff is required, the departmental grant must be maintained in real terms and the equipment grant increased. Better methods of equipment sharing must be evolved between departments and universities. This will require a change in attitudes from administrators, some academics and granting bodies; magnanimity is a virtue more widespread in times of plenty.

As Professor Monty Frey, chairman of the CHUCD says: "Chemistry is central to science. The future success of teaching and research in chemistry in our universities depends largely on the present decline being halted and lost ground regained."

The author is press officer at the Royal Society of Chemistry.

Table 2. Technical and clerical staff.

	Technical staff (37 August)	Clerical staff (38 August)
1973	1239	271
1974	1223	259
1975	1176	255
1976	1165	254
1977	1137	254
1978	1120	248
1979	1107	249
1980	1084	245
1981	1060	247

Table 1. UGC Supported staff with tenure (42 departments supplied data).

	Lecturers	Reader-senior lecturers	Professors	Total
October				
1973	613	338	143	1094
1974	547	372	143	1062
1975	537	361	142	1040
1976	527	350	140	1017
1977	508	331	148	987
1978	488	408	151	1047
1979	488	421	153	1062
1980	445	417	157	1020
1981	423	421	157	1001
1982	406	411	144	961

Table 3. Age distribution of academic staff in chemistry (UGC figures).

Year	30	30-34	35-39	40-44	45-49	50-54	55-59	60+	Total
1977-78	70	178	335	373	280	207	107	70	1820
1978-79	77	123	253	377	325	228	138	78	1803
1980-81	78	108	219	358	335	247	154	86	1885
1981-82	69	97	191	333	362	254	173	55	1654
Steady State	117	171	202	215	228	222	207	191	1554

* The above data for chemistry staff UGC funded may only be accurate to 2 in each five year band as they are calculated from figures of the total. † Note that age peak shifts to 45-49 group in 1981-82. Highest age peak in any science based discipline. ‡ More than 100 members with the exception of metallurgy (50-54). Most science based disciplines peak at 40-44 or 35-39.

BOOKS

Africa's philosopher king

by Christopher Clapham

Amílcar Cabral: revolutionary leadership and people's war by Patrick Chabal
Cambridge University Press.
£22.50 and £9.95
ISBN 0 521 24944 9 and 27113 4
In the Twilight of Revolution: the political theory of Amílcar Cabral by Jock MacCulloch
Routledge & Kegan Paul, £6.50
ISBN 0 7100 9411 6
The People of the Cape Verde Islands: exploitation and emigration by António Carreira
translated and edited by Christopher Fyfe
C. Hurst, £13.50
ISBN 0 905838 68 8

Amílcar Cabral has in some measure replaced Julius Nyerere as the thinking man's African philosopher king. He has all the qualifications: an articulate intellectual, a sympathetic individual, and the leader of a revolutionary guerrilla nationalist movement in one of the most obscure of African micro-states, Guinea-Bissau. He was assassinated, like Abraham Lincoln, at a moment when military victory was all but achieved, and the daunting task of reconstruction (which his successors manifestly failed to cope with) not yet begun.

Writing about such a paragon presents severe problems both of academic balance and of intellectual approach. A basic sympathy for the subject must be taken for granted: for Chabal (whose name's similarity to that of his hero is confusing but coincidental), Cabral is simply "the most successful African revolutionary leader" and the party he led, the PAIGC, "the most successful nationalist movement in Black Africa"; for MacCulloch, "the revolution in Guinea assumed an importance far out of proportion to the size or economic significance of the country". The intellectual problems concern the relationship both between individual leadership and social movement, and between the theory or ideology articulated by the leader of such a movement, and what actually happens on the ground. Quite simply, Chabal is aware of these problems, and in consequence (in part at least) has written a good book; MacCulloch isn't, and has not.

Cabral is as much a general history of Guinea-Bissau as a biography of its leader. It is the result of diligent research in almost all the relevant territories (only Guinea-Conakry, the main base area for PAIGC guerrillas, having been closed to him) and interviews with many of the participants, including Cabral's brother and successor Luís, his first (and Portuguese) wife, and Otelo de Carvalho, one of the leaders of the Portuguese revolution of 1974 whose views were heavily influenced by the man he was fighting in Guinea. Almost apologetically, Chabal concludes that Cabral's leadership was essential, if not to the existence of anti-colonial nationalism in Guinea, then at least to the effectiveness with which it was organized and the success which it achieved both domestically and abroad. In contrast with both Angola and Mozambique, Cabral achieved a high degree of domestic unity, fought a "clean" war, without blood dependency. Though Cabral's death was a help (despite a wide range of domestic tribal groups), the example of Bissau, where rural peasant movements have succeeded in what elsewhere has failed, may have been Cabral's leadership may have been.

There are three less than perfect points at which Chabal's argument betrays him, most obviously in the tricky question of the effect of Cabral's death in 1973. On the one hand, he appears that by that time Cabral had established an institutional structure which was quite capable of carrying on the struggle without him; on the other, he suggests that the death of Cabral was a severe blow to the revolution.



Amílcar Cabral addressing young soldiers at one of the military training camps of the PAIGC in 1972.

brother in 1980, to the effect that the post-Independence government reversed Cabral's priorities in almost every way: in particular, that it extended repression to the whole of the agrarian development policy which Cabral (a professional agronomist) favoured by prestige projects benefiting only the capital.

Underlying this ambivalence is the important problem of the transition from rural guerrilla warfare to central administration through some kind of state apparatus. Cabral was certainly aware of the problem, though his solution - that the petty bourgeoisie, which inevitably acquired a dominant

position at independence, should commit "class suicide" by aligning itself with the interests of the workers and peasants - was both claptrap in terms of any Marxist conception of class behaviour, and quite inadequate as a guide to developments in Guinea, at any rate in his absence. Whether things would have been different had he been there remains an open question.

Chabal's book has two chapters rather awkwardly tacked on to the end of the main text. One, a comparative analysis of the guerrilla nationalist movements in Portuguese Africa, provides an excellent introduction to an important subject, well worth reprinting outside the specialist volume to

which it is appended. The other deals with Cabral's social and political thought, emphasizing its subordination to the practical problems of fighting the war, and - illuminatingly for one who is generally associated with Marxist dogma - his concern not so much with social groups as for personal moral commitment.

For MacCulloch, by contrast, the theory comes first. "It is certain that if the party had entered the struggle armed with the wrong theory, the war against the Portuguese would soon have been lost." Though this assertion sits rather uncomfortably with two sections on "the inevitability of victory", since the PAIGC was

"fighting on the side of history", a presumably provides the justification for the book. Yet not only does MacCulloch fail to relate theory to practice through any analysis of the guerrilla movement; he also has enormous difficulty in working out what theory is, and does not much like what he can find of it. Cabral's view of the peasantry is "muddled" and "ambiguous", and his work on tribalism a "shallow". Cabral's exposition on the state and his account of the petty bourgeoisie sit rather uncomfortably side by side. His "productive forces thesis does not work in the way in which Cabral hoped it would".

Under all this confusion there may be a hypothesis not only a theory but a correct one: "Cabral has remarkably little to say about the theoretical foundation on which his class analysis of Guinea is based... And yet the remarkable success of the PAIGC in its struggle against the Portuguese army proves that Cabral's analysis of the social structure in Guinea was accurate." Starting with a view of the relationship of theory to practice which he cannot substantiate but will not abandon, MacCulloch is reduced to a simple circular argument.

Cabral himself was a Cape Verdean, from the archipelago some 350 miles off the coast of Senegal discovered by the Portuguese in 1460 and thereafter colonized by a mixture of people of mostly African descent. Its precarious population rises rapidly from a high birth rate, only to be savagely cut down by periodic droughts in which many thousands die. The only thing to do is to get out, and *The People of the Cape Verde Islands*, written by a Cape Verdean, consists in large part of the grim statistics of death and emigration. Its tone is often touchingly philosophical: "We Cape Verdeans are like a horse with wings: we don't have a foot on the ground, nor do we read like a sky." Yet despite its ideological balance and a haphazard organization, the cumulative effect of hopelessness and misery which it conveys is overwhelming.

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Days of the commune

The End of the Russian Land Commune, 1905-1930
by Dorothy Atkinson
Stanford University Press, \$29.50
ISBN 0 8047 1148 8

Until the last months of 1929, the peasant land commune - the *mir* - maintained a thriving existence throughout almost the whole of the large part of Soviet territory occupied by the Slavic peasantry. The *mir* - a word which significantly also means "peace" or "order" - was a collective institution which managed the land: peasant households worked the land individually, but strip farming predominated almost everywhere. The rotation of crops, and all disputes about land, were matters for the principal organ of the commune, the "gathering" (*sobor*). Moreover, periodic redistributions of land between households so that each family was equal in the number of land proportionate to the number of its members, and households in the commune.

All this made the commune the most powerful rural institution, locally and economically stronger than the village soviet which was the official agency of the state in the countryside. In 1920, as Professor Atkinson points out, the commune was the only institution in the countryside which was not controlled by the state.

"master" of the countryside and a "state within a state". The Soviet Union writes Professor Atkinson, with pardonable exaggeration, "might be under the dictatorship of the proletariat, but the countryside was under the dictatorship of the commune."

The commune was swept aside by the course of the forced collectivization of agriculture in 1929-33, but it played its part in this dramatic revolution. As Professor Atkinson perceptively explains, the field layout managed by the commune could be collectivized much more easily than collectivized much more easily than the boundaries between the strips were ploughed over, and the collectivized fields immediately emerged (Leonid Brezhnev was one of the young "land consolidators" who went to the villages to push through this transformation). Moreover, the state found it necessary to assemble village gatherings, or substitutes for them, in order to try to overcome some of the communal authority for collectivization. Frequently, the new state-controlled collective farm simply occupied the territory of the old commune. The figure of the commune played a significant part in the first stages of the collectivization drive.

Stalin's collectivization drive was not the first attempt by the Russian state to modernize the countryside by eliminating the commune. After the emancipation of the serfs in 1861, the state had strengthened the commune as an agent for rural administration; peasants could not leave it without permission, and it bore collective responsibility for its members. But in the first half of the nineteenth century, when the commune was at its most powerful, it was a relic of the past, a relic of the feudal system, and it was a relic of the feudal system.

the stability of the countryside and the efficiency of agriculture. The commune's tax responsibilities and rights were abolished in 1903 and 1906. And the Stolypin reform endeavoured to separate out households from the commune, as a step towards consolidating their strips into independent farms.

Professor Atkinson's analysis of the Stolypin reform and its effect on the commune is shrewd and careful. She shows, contrary to the strongly-held opinions of the strongly-held Soviet historians, that the reform did not succeed in making major inroads into the authority of the commune over the land. The amount of land held by communes declined by about one seventh between 1905 and 1915; but many of the strips continued to hold their land in strips. On the eve of the 1917 revolution, less than 10 per cent of peasant households held their land in consolidated form, and in only 2 or 3 per cent of holdings was the peasant farm itself rather than the centre of the village. What would be thought of as a "farm" in western capitalist countries was rarely to be seen in most of the Russian empire.

And the 1917 revolutions reversed the trend towards consolidating farms. Nearly all the private land owned by both landowners and peasants, including most of the consolidated farms, was now incorporated or reincorporated into the commune. This incorporation was a revolution, was in no way accepted by them as a necessary means to securing the support or assistance of the state. In the 1920s the debate about the commune was thus resumed in a new

social context. Some argued, as Marx once had done, that the commune could be adopted as a constituent unit of socialist society; the commune found its defenders in the party journal as late as 1928. Most party leaders and their advisers, however, held that the commune was dominated by the better-off or *kulak* peasants, and must eventually give way to new forms of cooperative or state farming. But for more than a decade the party battled the commune with extreme caution, leaving the peasants to run their own agriculture and root of their own affairs.

Professor Atkinson provides a balanced account of the dilemmas of party policy towards the peasantry in the 1920s, and of the effects of the switch towards rapid industrialization on the fate of the commune. In considering the commune in this context, her account draws on and supplements the work of Carr, Malin, Tanichuk and the Soviet historian Danilov. Her examination of the post-revolutionary commune as an agrarian and administrative institution is, however, less detailed than her thorough account of developments up to 1917. Studies of regional variations in the 1920s and of the impact of Soviet attempts at land consolidation and improvement on the commune remain to be undertaken. In the meantime, Professor Atkinson provides an account of policy and practice which rooks a rare and welcome attempt to bridge the divide between the professions of "revolutionary" and "post-revolutionary" historians, strange as that divide is in the West and in the Soviet Union.

R. W. Davies

R. W. Davies is professor of Soviet economic studies at the University of Birmingham.

BOOKS

Before the famine

Why Ireland Starved: a quantitative and analytical history of the Irish economy 1800-1850
by Joel Mokyr
Allen & Unwin, £22.50
ISBN 0 04 941010 5

Professor Mokyr's title confronts the 64,000-dollar question in Irish history. The short explanation, of course, is simply that a high proportion of the Irish population had, by the 1840s, become heavily dependent for its food supply upon a monoculture of potatoes, a crop, they discovered too late, that was susceptible to occasional total failure. The "blight" of 1846 left them virtually foodless, so, in the absence of effective famine relief, they starved.

Mokyr takes all this for granted, and concentrates not so much on why the Irish peasantry fell into the potato trap as on the underlying weaknesses of the Irish economy: by half-way down his first page he has redirected his attention to the question "Why was Ireland poor relative to most other parts of western Europe in the first half of the nineteenth century?" The quest for an answer to this question leads him to produce one of the most important and informative books on modern Irish economic and social history yet written.

Mokyr's method is indicated by his subtitle, which indicates that, important as are his conclusions, his text is unlikely to be everybody's favourite bedtime reading. His analysis is statistical and occasionally econometric, and the book's framework lies in 65 tables. His starting point is a set of seven commonly-accepted explanations for the economic backwardness of pre-famine Ireland: that Ireland was ill-endowed with natural resources; that the Irish character was inimical to the possible economic developments of the age; that Britain kept Ireland backward intentionally or unintentionally by discriminatory economic policies; that the Irish character and way of life were inimical to economic growth; that, in consequence of over-population, Ireland was caught in a Malthusian trap; that Irish agriculture and industry were short of capital; that Ireland failed to generate a supply of entrepreneurs; and, finally, that emigration robbed the country of the fittest and most energetic of its young adult population.

Before embarking on the seven chapters that successively probe these propositions, the reader can scarcely avoid doubting whether the exiguous and already well-exploited statistical sources for the economic and social history of early nineteenth-century Ireland provide sufficient data to meet the exacting requirements of the quantitative and analytical approach promised in Mokyr's subtitle. Yet the chapters live up to his promise. How does he achieve this? First, by a tireless combing of the censuses, above all the admirable one of 1841; and, second, by skilful and imaginative content analysis of the enormous mass of evidence presented, mainly in the form of answers to standard questions put by hundreds of witnesses, to a small number of commissions and select committees of the 1830s and 1840s.

Quantitative data culled with considerable ingenuity from these and other, mainly parliamentary, sources is deployed to answer the series of questions formulated to test the validity of the propositions considered in each chapter. Mokyr is scrupulous both in delineating the assumptions that necessarily relate his questions, framed primarily for his answerability from the available data, to the wider historical problems he is tackling, and in acknowledging the extent of the areas left blank by his refusal to attempt unanswerable questions. Some of the gaps may be filled from literary sources, and Mokyr does not, as do so many of his "econometric" colleagues, scorn the conventional approach to historiography. He has, indeed, compiled and made very effective use of a wider range of contemporary literary sources than most of his rivals in the field.

Mokyr's answers, as might be expected from so scrupulously honest a

study, are not unequivocal. Some of the analyses, while always interesting and often illuminating, seem tangential to the straight course dictated by the original issues, so that his conclusions, valuable as they are, do not always match up exactly to the propositions formulated in his opening chapters. He does, however, argue persuasively that over-population, the Irish land-tenure system, and lack of resources can take no more than a marginal share of the blame for Ireland's economic backwardness.

More importantly, he accepts with some qualifications the view that productivity in industry and agriculture was kept low by serious under-capitalization. He acknowledges, however, that this is a question-begging statement, and some of his most acute analysis is directed towards further endeavours to explain why these sectors were under-capitalized, in contrast, say, to some areas of the infrastructure. Some responsibility is also attached to the role of absenteeism by landlords, to the weakness of economic

and social institutions, and to the encroachment or demoralization of the residual population following emigration. All these sub-topics are investigated most imaginatively and instructively.

Not all Mokyr's analyses and methodology will find complete acceptance, of course, or even total comprehension by his less numerate readers, and some detailed carping may follow in the learned journals. But Mokyr has opened a new door on the history of pre-famine Ireland and his original, if highly technical, approach must surely stimulate renewed interest in what was in danger of becoming a slightly jaded corner of Irish historical studies. It is good to find that the subject can be so splendidly revived, albeit by an American historian of Low Countries origin.

M. W. Flinn

M. W. Flinn is professor emeritus of social history at the University of Edinburgh.

Resisting revolution

The Younger Pitt: the reluctant transition
by John Ehrman
Constable, £21.00
ISBN 0 09 464930 8

In the second volume of his full-scale biography of the Younger Pitt Mr John Ehrman carefully charts the transition from the confident yet realist reformer of the 1780s to the resilient symbol of resistance towards revolution both at home and abroad.

This contrast has long been one of the clichés propagated about Pitt, and it is the greatest strength of Mr Ehrman's study that he demonstrates the limits within which Pitt's commitment to reform always operated and the reluctance with which he came to acknowledge the scale of the challenge posed by the French Revolution and the likely length of the war against France, which, like most of his contemporaries, he had initially thought would be brief. The impression given is that Pitt lapsed only occasionally into alarmism or despondency, and that he gradually responded to circumstances which he could not control, and which threatened his cherished schemes for sustained administrative and fiscal reform, commercial expansion, and long-term prosperity.

Mr Ehrman makes it clear that Pitt was fully aware of his defects as a war leader - "I distrust extremely my ideas of my own on military subjects" - but he nevertheless brings out the extent to which the British war effort depended upon Pitt and two members of the Cabinet who were close to him - Dundas and Grenville. Since it has often been the practice to sea in Dundas a rather baleful influence upon Pitt it is worth noting that in Mr Ehrman's pages Dundas emerges as a man of sound judgment, rather less volatile than Pitt himself, and always conscious of the realities of power.

Mr Ehrman is neither partisan nor doctrinaire. His judgment is sound and he judiciously appreciates work done by those historians whose outlook he does not share. He assesses conflicting interpretations accurately and fairly and integrates differences of emphasis into a coherent unity. He conveys both the ebb and flow of political debate and decision making, pointing out the inevitable constraints of time, slow travel, and uncertain and tardy communication upon the way in which Pitt and his colleagues perceived and performed their tasks, and a wonderfully immediate sense of historical reality.

A good many of the assumptions that necessarily relate his questions, framed primarily for his answerability from the available data, to the wider historical problems he is tackling, and in acknowledging the extent of the areas left blank by his refusal to attempt unanswerable questions. Some of the gaps may be filled from literary sources, and Mokyr does not, as do so many of his "econometric" colleagues, scorn the conventional approach to historiography. He has, indeed, compiled and made very effective use of a wider range of contemporary literary sources than most of his rivals in the field.

admirably analysed, and the complex and constantly shifting pattern of alliances with Austria, Prussia, Russia and Spain is dealt with in magisterial fashion. Pitt's attitude towards domestic radicalism is shown to have been less rigid than was once assumed: like a number of other historians Mr Ehrman emphasizes the significance of the Portland Whigs in shaping government policy towards domestic unrest.

In these days of uncertainty among publishers it is a fortunate historian who can devote over six hundred pages to covering something like six years of history. But perhaps because of the monumental scale of the work one cannot help but feel that the work he almost vanishes from the scene. In his anxiety to cover the full range of issues Mr Ehrman comes near to submerging Pitt's life in a welter of detail about his times. This may be an understandable corrective to the occasional disease of biographers, which is to place their subject too conveniently at the heart of events, and if his great work has a flaw it is that Mr Ehrman cannot bring himself to leave anything out. It would be as if this were to deter anyone from exploring his work with attentiveness or if it seriously limited the impact of what is surely one of the grandest ventures in historical biography ever embarked upon in a generation which has seen a proliferation of historical research.

John Derry

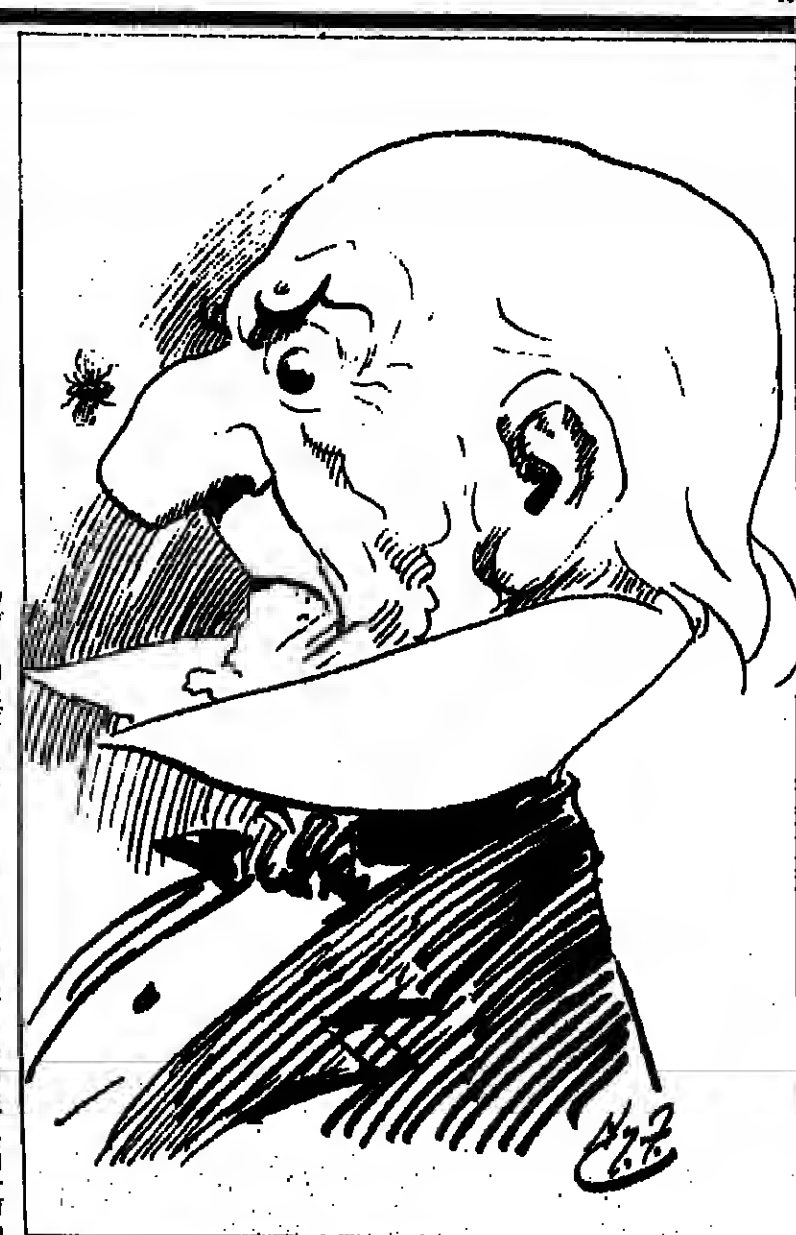
John Derry is reader in modern history in the University of Newcastle upon Tyne.

Labour's godparent

British Workers and the Independent Labour Party 1888-1905
by David Howell
Manchester University Press, £35.00
ISBN 0 7190 0920 0

At a time when the Labour Party is attempting to walk the political tightrope between maintaining the purity of its socialist ideals and winning more electoral support it is worth remembering that the Independent Labour Party, the intellectual godparent of the present Labour Party, was charting a similar course in its formative years between 1893 and 1906. It is often maintained that the ILP only won wider political support by abandoning its socialist precepts and by aligning with non-socialist groups.

The formation of the Labour Representation Committee in 1900 established a Labour alliance between socialist parties and non-socialist trade unionists, a marriage of convenience which opened the way for Labour's capture of the working-class vote. The seer of Gladstone-MacDonald pact of 1903 is seen as the culmination of an electoral understanding between the LRC/ILP leadership and Liberal progressives, thus enabling Labour candidates free use of the progressive vote in some sort of "electoral pact" with the Liberal Party. David Howell's new book endorses these views, maintaining that the ILP worked with the



Gladstone (and a fly), from an exhibition of the work of British caricaturist Harry Furness (1854-1925) currently on show at the National Portrait Gallery in London.

grain of British politics so that by the 1906 General Election "socialists secured entry to parliament, an achievement which would have been unlikely if a more independent and more overtly socialist strategy had been followed". While such an observation is hardly earth-shattering, Howell does offer a sophisticated and well-documented analysis of the local and national events which led to the ILP's accommodation with non-socialist groups. Combining his own research with a synthesis of recent academic findings, he has produced the best general interpretative work of its kind since Henry Pelling's *The Origins of the Labour Party* (1954).

Howell maintains that the ILP forged a bond with the working classes out of the immense diversity of working-class backgrounds and experiences, to be found among trade unions and between regions. Industrial unrest, the influence of individual trade union leaders, the size of communities, and the power of the employers all conspired to produce a working-class response to the ILP which often varied in timing, extent and deep-rootedness. What were these disparate responses directed towards the infant of the ILP?

"Big fish" - Karl Hardie, Bruce Glasier, Philip Snowden and Ramsay MacDonald - who recognized the importance of winning over trade unionists, even if they were disdainful of its ability to act as a lever for political and social change. Yet until a viable Labour Party was established, incorporating trade union support, the ILP leaders were content to remain "socialist" and "the cause" would have to assume a low profile.

Howell's book examines the varying origins of trade union support for the ILP, studies the communities in which the ILP did, and did not, develop, examines the emergence of the national movement, and establishes the relationship between the ILP and other political parties. It is a wide-ranging study which, among other things, draws significant contrasts between the ex-Liberal support which the ILP won in the Liberal stronghold of the West Riding and the rivalry which the ILP and Liberal Party entered into in the Conservative-dominated Lancashire.

In the former region the ILP won Liberal support almost by default while in the latter region the Liberal Party was as concerned as the ILP to extend its political support in the face of popular Toryism.

There are many strengths in this book. Howell's knowledge of the events and issues is impressive, testified to by more than seventy pages of footnotes. The book is lucidly written, thoughtful, provocative and persuasive. Howell asks many questions about the inevitability of the Labour Party emerging through trade unionism, suggesting that other routes, such as the formation of a united socialist party, were blocked by the ILP leadership. He is open-minded and does not overtly pursue the shibboleths of any particular school of historical thought. His sensitivity to his subject permits him to recapture the missionary zeal of ILPers with their faith in the plasticity of human nature. Certainly, sections of this book will prove to be seminal to future research.

Yet, notwithstanding Howell's empathy with his subject, other sections will undoubtedly raise the hackles of many historians whose detailed local research leads them to different conclusions. Howell's trade union section is perhaps unnecessarily detailed, given the monographs already written on mining by Roy Gregory and cotton by H. A. Turner. And there may also be some disappointment that the book finishes in 1906, thus largely ducking the current controversy surrounding P. F. Clarke's contention that New Liberalism was halting and reversing the growth of Labour in Lancashire, and possibly elsewhere, between 1906 and 1914.

Despite these criticisms, this is a monumental work. It deserves to be read widely and might well become a classic. It is to be hoped that it will eventually appear in paperback, for it is an invaluable guide through the gangrene of early Labour politics. Labour's current leadership might even find that it offers them a germ of an idea to rescue them from their present predicament.

Keith Laybourn

Keith Laybourn is senior lecturer in history at Huddersfield Polytechnic.

A paperback edition of Lawrence Freedman's *The Evolution of Nuclear Strategy* (reviewed in *THE* of 8th January, 1982) has been published by

Polytechnics cont

Bristol Polytechnic
Computer Studies and
Mathematics Department

Applications are invited for the following posts, duties to commence on 1 October 1983 or as soon as possible thereafter.

RESEARCH ASSISTANT - INFORMATION NEED AND PROVISION IN ADVANCED MANUFACTURING SYSTEMS - Ref No R/88

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RESEARCH ASSISTANT - KNOWLEDGE ACQUISITION IN EXPERT SYSTEMS - Ref No R/87

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This post is for a research assistant in the Production of a Computerised Speech Therapy System project. The post holder will be responsible for the day-to-day running of the project, which involves the investigation of speech therapy techniques and the development of a computerised speech therapy system. The post holder will also be responsible for the development of a computer-based system for the management of speech therapy data.

Salary scale for the above posts is £12,125 to £15,125 per annum. For further details and applications, please contact the Director of Studies, Bristol Polytechnic, 100, Park Street, Bristol, BS1 2JH. Tel: 0117 928 5551. Fax: 0117 928 5552.

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Coventry (Lanchester) Polytechnic
Department of Mathematics

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Research & Studentships

University of Swansea

Research Assistant
Applications are invited for the vacancy of Research Assistant in the Department of Management Science and Statistics to work on an SERC funded project to model a waste reclamation system. Applicants should be graduates with experience of modelling and computer programming.

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The Open University
Faculty of Mathematics

RESEARCH ASSISTANT IN MATHEMATICS EDUCATION

Applications are invited for a three-year post of Research Assistant in the Faculty of Mathematics. The post holder will be responsible for the day-to-day running of the project, which involves the investigation of mathematics education and the development of mathematics education resources. The post holder will also be responsible for the development of a computer-based system for the management of mathematics education data.

Other current interests include the development of a computer-based system for the management of mathematics education data. The post holder will also be responsible for the development of a computer-based system for the management of mathematics education data.

The post is for three years and is available from 1 September 1983. Appointment will be made on a permanent basis. The salary scale is £12,125 to £15,125 per annum.

For further details and applications, please contact the Director of Studies, The Open University, 100, Park Street, Milton Keynes, MK1 1JH. Tel: 0494 412345. Fax: 0494 412346.

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University of Essex
Department of History

SENIOR RESEARCH OFFICER

Applications are invited for a senior research officer in the Department of History. The post holder will be responsible for the day-to-day running of the department, which involves the investigation of history and the development of history resources. The post holder will also be responsible for the development of a computer-based system for the management of history data.

For further details and applications, please contact the Director of Studies, University of Essex, 100, Park Street, Essex, SS1 1JH. Tel: 0206 222 5551. Fax: 0206 222 5552.

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The University of Sheffield
Department of Civil & Structural Engineering

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University of Leicester
Department of Communications

RESEARCH ASSISTANT
Applications are invited for a research assistant in the Department of Communications. The post holder will be responsible for the day-to-day running of the project, which involves the investigation of communications and the development of communications resources. The post holder will also be responsible for the development of a computer-based system for the management of communications data.

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Association of University Teachers
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For further details and applications, please contact the Director of Studies, Association of University Teachers, 100, Park Street, London, W1 1JH. Tel: 011 275 5551. Fax: 011 275 5552.

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The University College of Wales
Department of Agricultural Science

RESEARCH ASSISTANT

Applications are invited for a research assistant in the Department of Agricultural Science. The post holder will be responsible for the day-to-day running of the project, which involves the investigation of agricultural science and the development of agricultural science resources. The post holder will also be responsible for the development of a computer-based system for the management of agricultural science data.

For further details and applications, please contact the Director of Studies, University College of Wales, 100, Park Street, Aberystwyth, Ceredigion, SY23 3DA. Tel: 01654 222 5551. Fax: 01654 222 5552.

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The University of Leeds
School of Geography
PREDOCTORAL RESEARCH ASSISTANT

Applications are invited for a two-year post of Predoctoral Research Assistant in the School of Geography. The post holder will be responsible for the day-to-day running of the project, which involves the investigation of geography and the development of geography resources. The post holder will also be responsible for the development of a computer-based system for the management of geography data.

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The University of Wales Aberystwyth
Department of Botany & Microbiology

POSTDOCTORAL RESEARCH ASSOCIATE

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School of Geography

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The University of Wales Aberystwyth
Department of Agricultural Science

RESEARCH ASSISTANT

Applications are invited for a research assistant in the Department of Agricultural Science. The post holder will be responsible for the day-to-day running of the project, which involves the investigation of agricultural science and the development of agricultural science resources. The post holder will also be responsible for the development of a computer-based system for the management of agricultural science data.

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City of London Polytechnic
Academic Registrar's Office
ADMINISTRATIVE OFFICER

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Overseas

UNIVERSITY OF NATAL
Faculty of Law

Applications are invited from suitably qualified persons for the post of Professor of Private Law. The post holder will be responsible for the day-to-day running of the project, which involves the investigation of private law and the development of private law resources. The post holder will also be responsible for the development of a computer-based system for the management of private law data.

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UNIVERSITY OF TRANSKEI

ASSOCIATE PROFESSOR OF PRIVATE LAW

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For further details and applications, please contact the Director of Studies, University of Transkei, 100, Park Street, Transkei, 6001. Tel: 031 275 5551. Fax: 031 275 5552.

Please quote appropriate reference numbers in all communications.

UNIVERSITY OF NATAL
Department of Agriculture

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Please quote appropriate reference numbers in all communications.

Overseas continued

Bayona University, Kano, Nigeria

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Salary: On scale USS 15 N14,250 x N720-N15,720, placement may not necessarily be on the first point of the scale.

Conditions: Nigerian candidates applicable to retiring age. Expatriate staff on contract plus 25% of basic salary. Subsidised housing, air passages for themselves and family (up to five children), leave allowances, car loan, car allowance of N45 per month. Free medical and dental care.

Method of Application: Candidates should submit four typewritten copies of curriculum vitae with full details of qualifications, experience and personal details, a list of publications with dates and names of journals, the names of three referees who know you professionally to:

The Director, Nigerian Universities Office, 180 Tottenham Court Road, London W1P 9LE

The Director, Nigerian Universities Office, 180 Kent Street, 7th Floor, Chicago, Illinois, Canada K1R 8A3

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according to your place of residence by 8th September, 1983. Candidates are kindly requested to ask their referees to write to the appropriate office.

UNIVERSITY OF NATAL
Faculty of Law

Applications are invited from suitably qualified persons for the post of Professor of Private Law. The post holder will be responsible for the day-to-day running of the project, which involves the investigation of private law and the development of private law resources. The post holder will also be responsible for the development of a computer-based system for the management of private law data.

For further details and applications, please contact the Director of Studies, University of Natal, 100, Park Street, Natal, 3201. Tel: 031 275 5551. Fax: 031 275 5552.

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UNIVERSITY OF TRANSKEI

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The Department of Mathematics invites applications from suitably qualified graduates with relevant industrial experience to apply for the above position.

Important factors in the appointment will be: previous experience in Operations Research; experience in teaching at the tertiary level; ability to work with industry; and a commitment to research.

Salary: Senior Lecturer: \$140,000-\$152,000. Senior Lecturer: \$142,000-\$154,000.

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Further information may be obtained from Mr Bob Kewenig, Head, Department of Mathematics, Swinburne Institute of Technology, 3121 31st Street, Melbourne 3121.

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A survey of some likely sites and a preliminary estimate of generating costs.

Applications are invited for two posts as Research Assistants to work on the projects indicated above. Both projects, which have strong industrial links, are funded by SERC and the posts are available from 1st September 1983 for two years. Research Assistants are encouraged to register for a higher degree and should have a good honours degree in an appropriate discipline.

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Don's diary

February '81

I am called on the dean's office and told that I am on the short list of senior staff for premature retirement. I should be pensioned off by the end of the academic year. I was put to me that there was no room for negotiation and that the scientific staff had to go. The clinical staff could be retained; this was important for the care of the patients. So I have seven months to prepare for retirement at 56. With two teachers at school I will have to augment my pension. Penny has been trying to get employment as a counsellor for three years with no success. For me there is now a possibility of a teaching or research post. I decide to go for private practice counselling.

October '81

The seven months have passed and a new academic year has started and I am still on full salary. I am given a vague idea of what the monetary sums of retirement are likely to be and told that complications have arisen. I would first employed on this site by the hospital. After a couple of years it was hoped that half my salary would come from university funds so that my teaching would be recognized by academic status. After a few more years I became full institute staff.

My time used to be divided between three interests. There were eight or nine medical laboratory technicians (as they were then called) to be supervised in their service work for the hospital. My research interest was supported by grant incomes and involved a technician and a PhD student.

My teaching interest outside this institute was with undergraduate and intercollegiate courses. Within the institute my main interest was in provision of joint studies for some 50 PhD, MPhil and MD students. This also supported them when their supervisor had to spend long hours in the clinic and had no time for research and teaching. I very much enjoyed work with these students and was honoured by being designated senior tutor for postgraduate research students.

Although my brief was to help students solve technical problems they also began to bring me personal problems. I coped with this new dimension in my life by going on the University of London extra-mural course for student counsellors and have attended a weekly supervision group during the term over since.

December '81

As a good academic I look around for ways of gaining the qualifications I consider necessary to become a professional counsellor.

The academic aspects will be taken care of by enrolment for two years study, on the MA course in humanistic psychology offered in London by Antioch University of Yellow Springs, Ohio.

January '82

A student again and enjoying the experience. I even have an international student card although it's of no use as the upper age limit on it is 26.

The MA course has two components. The first consists of tutorials on subjects like Adler and Jung. The other aspect of study occurs away from Antioch premises and is entirely optional. I take up Swedish massage (called physical therapy) to make it respectable so that I have a licence to touch the counselled client. I experience biogenetics, Gestalt groups, sexuality studies and transnational analysis. A one-year course in hypnotherapy will provide a diploma and accreditation to practice.

Perhaps the most enjoyable aspect of my studies at this stage is that the salary because the pension is still being negotiated. I am anxious to see who is negotiating but it is to my advantage to keep quiet.

February '81

that the negotiators extend the time, if only to increment the pension by another year of service.

October '82

On the 29th a letter and a farm arrive and I am pensioned off on the 31st. No information about how many pounds per month will be credited to my bank. No information on the size of the lump sum.

Two courses this term will cover the ancient ideas about memory that developed into what we now know as psychology and the most modern of presumed psychologies, neuro-linguistic programming. The books for the latter have curious titles like *Frogs into Princes* and *Practical Magic*.

November '82

No pension in the bank and of course no salary as I rattle words with various officials and am put into contact with a man in Liverpool with a very warm tone of voice. Very reassuring. He will surely sort out University Superannuation Scheme papers and he promised money by Christmas.

December '82

No pension in the bank and I fantasize about my cheque in admixture with greetings cards. But I know that money circulates without cheques; something to do with computers. The academic board elects me honorary senior lecturer. The borough council says my children shall have free dinners and my house have a rate rebate.

January '83

No pension in the bank. Penny and I are determined to operate alone in our own private practice counselling service.

Dear octogenarian aunt dies and solves our present financial difficulties. A house buy-sell chain collapses. Little response to advertisements offering "creative hypnosis". "Would be easier if one could directly offer to make people ex-smokers, ex-fatties, ex-thinners, ex-neurotics etc. Must stay ethical or be drummed out of the hypnotherapists support society."

February '83

Pension data becomes available but only half of what was hazarded. Much roasting down telephones.

We fall in love with one and capture an Edwardian house; the price is reasonable because it is on the main road with underground trains of the Barnes branch of London's Northern Line at the bottom of the garden.

March '83

All the promised money arrives, lump sum, pension and all. Bank manager very pleased.

I become a voluntary worker at the hospital so I go to town once a week for my fare only and help develop the population screening programme.

August '83

My first psychology paper is accepted for publication by the *European Journal of Humanistic Psychology*. The title is "Towards NLP with a human phenomenon mentioned above, MA studies will end at Christmas. Meanwhile I will go on a summer course in Sweden - practical Shamanism. A friend has put me on a strict vegetarian diet. So I'm teaching again and have greatly enjoyed an audience in West Hampstead.

Ray Edwards

The author was senior lecturer in endocrinology at the Institute of Child Health, Postgraduate Medical School, University of London and the Medical School of the Hospital for Sick Children, Great Ormond Street.

As the long vacation - already partially ruined by thinking about the National Advisory Body and making arrangements to deal with it - slowly gets into shape and promises a few weeks of relaxation and the opportunity to think of other things, I find my mind, as usual, turning to my own subject, architecture. I doubt if any academic can ever wholly escape from his or her own subject, whatever job offers itself after graduation. Perhaps it is easier for those who do general degrees; most of us are the products - some might say, the victims - of the specialized honours degree, which we followed at the most impressionable turning point in our lives.

Indeed I was much struck a little while ago by an academic administrator who had worked with the University Grants Committee insisting that academic members of that body do not support their own universities through thick and thin, whatever outsiders may say. But they do support their own subjects and are passionately loyal to these subjects whatever may happen to the institution in which they encountered them. So let me, dropping for a few hours my polytechnic management role, retreat into my own subject and rejoice in it. For architecture, whatever anyone else may think, is far and away the most fascinating and important subject of study in the entire academic world and I will always leap to its defence - especially now, when it seems to be under constant, mean-minded attack.

Architecture is in any case in my mind because I have just finished writing a book about it, which will appear in October. I cannot advertise it in advance, certainly not in these columns and am in any case suffering from the collapse of self-confidence that I imagine affects all authors who have corrected the proofs, realize that they ought to start again and rewrite the whole thing. There are of course a few good things in it and it might turn out to be the best book yet written on architecture. But I wonder.

Meanwhile I have been enjoying - yes, really enjoying - a number of books and papers about architecture in these islands at the turn of the century. For some years I have been lecturing about Lutyens and Mackintosh, varied some television pieces about the two former, and am now doing some work on the great Yorkshire architect sometimes known as the Lutyens of the north - Walter Brierley. For some months I have been seeing any chance to look at his buildings, only a very few of which are in the south, and it has been an uninterrupted delight. And also an occasion for envy. I now recognize that I should have been born a generation earlier and been able to

will endear more folk to it. But it would not, of course, produce lots of little Keith Josephs. There would still be your Jack Straws, no doubt. Having bemoaned the loss of Chris Price, let me say what a pleasure it is to have Jack share this column.

He is one of those eunuchs of the political scene - a Shadow Treasury spokesman. Can there be anything so frustrating? At present of course they are allowed to talk about what they are going to spend. But Jack Straw is already tipped as the Joel Barnett of the next Labour Government - should we ever see one. And as Joel once said: "What determines the stand you take is whether you are in or out of office; as Sir Keith might add: "The economic facts of life don't go away."

Keith Hampson

I must point out that Sir Keith Joseph is not intending to make monetarism compulsory for the under-fives. But suggestions that all pupils should learn the economic facts of life have raised the hackles of teachers - and not just of those on the left.

He is of course right. Hardly any younger knows how a company works; how it raises money or why it needs profits. It should not require O-level economics to find out. Sir Keith might be hoping that greater knowledge of capitalism is

depressing. For 10 years now we have had a plethora of schemes - I think at the last count - attempting to bridge the educational gap. They are not all equally bad, but the effect of most is pretty marginal. We need a bit less rhetoric and more of a lead from the centre. The Department of Education and Science is playing second fiddle to both the Manpower Services Commission and the Department of Industry.

If Sir Keith is serious about instilling the economic facts of life, he must make them examinable. He is adding to the examination spiral, but the truth is that teachers do better if they have clear objectives.

Our examination system is a mess. It is of course a rational system. But with regard to what has become its main function - providing assessments for employers - pupil profiles would indicate more about an individual's capacities and attributes. Back to the mid-1970s the Scottish Council for Research and Education showed what could be done.

But in one area examination cannot be replaced. Like a driving test, they can indicate whether a certain level of skill has been attained. So why do we not refer to a system of compulsory papers to test literacy and numeracy in addition to which all school-leavers would have to take a general paper which would embrace some history, some politics and the economic facts of life?

Building a humane approach



Patrick Nuttgens

design the kind of buildings that attracted me to architecture in the first place in the Indian summer of the English house.

For what a joy it must have been - interspersed of course with the gloom and disasters that attend any architectural enterprise - when the money was there and the last of the traditional craftsmen were to be made up house parties were staggered on the Somme; and after the war there were never again as many available to run the great houses. But there might still have been an economical English house and the immediate tradition that was based upon the needs of individual and the quality of the materials. The key to it was the understanding of building processes and the knowledge of the components that at the heart of all building, I felt, architecture developed from particular to the general and not the other way round.

There are signs that that English tradition will come to life again. Individual, even idiosyncratic, houses reach the pages of the *Architectural Review* - and even *Country Life* - so it will partly be because of the current shake-out of social class. At some gross modern housing, the representation of middle class living in working class areas. The richness of the arts and crafts movement was that it imagined working class houses that needed a middle class income. Perhaps as wealth finds its way into new hands in the electronic age, new humane architecture may emerge.

to the greatest architecture. He has had better concentrating on his castle at Skibo on the Orkney Islands. He only used St Dunon's as a monastery and so escaped the complications that he built his house to live in. Hearst (of the Kane fame) wrecked many buildings and shipped their ruins across the Atlantic to no effect other than ultimately to ruin his fortunes. He only used St Dunon's as a monastery and so escaped the complications that he built his house to live in. Hearst (of the Kane fame) wrecked many buildings and shipped their ruins across the Atlantic to no effect other than ultimately to ruin his fortunes. He only used St Dunon's as a monastery and so escaped the complications that he built his house to live in. Hearst (of the Kane fame) wrecked many buildings and shipped their ruins across the Atlantic to no effect other than ultimately to ruin his fortunes. He only used St Dunon's as a monastery and so escaped the complications that he built his house to live in. 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